The Protection and Renewal of Industrial Heritage from a Landscape Architect’s Perspective

--A comparison between the Center of Norrköping and Xu Jiahui Park in Shanghai

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Master Thesis
in European Spatial Planning and Regional Development
Blekinge Institute of Technology
Sweden, 2009

Submitted to Blekinge Tekniska Högskola for the Master of European Spatial Planning and Regional Development on the 11/5/2009
Abstract

Industrial heritage sites are special areas in a city. In recent years, China has paid more attention to the protection and renewal of industrial heritage. Because these areas have proved to be problematic, landscape architectures should work to solve these problems for future areas. This thesis asks the question: could there be a conscious way to deal with this issue?

Using the five major models and Linda Groat’s four perspectives on contextual design as the theoretical approach, this thesis conducts a comparative study on the center of Norrköping and Xu Jiahui Park in Shanghai. In order to investigate if Linda Groat’s categories could be useful to landscape architectures, this thesis analyzes the two cases and discusses to what extent they fit in with Groat’s theory. The investigation produces some results to guide landscape architects; so when facing an industrial heritage, the landscape design might be dealt with in a more conscious way.

Key words

Industrial Heritage, Protection, Renewal, Landscape Architect, the Center of Norrköping, Xu Jiahui Park.
Acknowledgement

At the moment, when I finished my thesis, I realized that it is not my own thesis but ours. There are a lot of people who gave me help and kind support through the process. I would like to express my sincere appreciations to them.

The first person is my supervisor Kalle Bergman who gave me a lot of support throughout the entire studying and researching process. Dr. Bergman has always patiently guided me in my search for useful information and has given me valuable comments on my thesis from the design of the idea to the finalization. Especially when there is a large change in my thesis, he encouraged and helped me to deal with various difficulties. I would like to give my sincere appreciation to him, and I frankly respect his precise attitude towards the thesis.

Next, I will give my thanks to Professor Jan-Evert Nilsson, Lars Emmelin and Thomas Hellquist who gave me valuable feedback and suggestions during the proposal and mid-seminar of my thesis. I also want to thank my teachers Bing Qiu, Rong Chen, Rui Yang from Nanjing Forestry University. With their assistance, I was able to complete the thesis step by step. Thanks to my academic writing teacher Ulrika Skagert who improved my English abilities and written skills.

I also want to thank Eric Markus. He gave me lots of help in the last year’s study in European Spatial Planning at BTH. Anna Stockman, a librarian at BTH, gave me guidance to how to search references from the Internet.

I want to acknowledge the help received from Håkan Andersson who works in the Town Museum in Norrköping. He provided me much information with the background of the city.

At last, I will thank my families and friends. With their support and encouragement, it would have been impossible for me to go on and complete this thesis.
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Introduction

As we enter into the post-industrial age, the question should be asked: Do we still need to keep the buildings and machines left from the Industry Revolution and from the large-scale production period? With the surprisingly fast development of cities in China, more and more people are flooding into the cities and there is a shortage of land resources. The large-scale modernization movement in some cities has led to a lot of industrial heritage’s demolition. However, in recent years, much more attention has been paid to the protection of industrial heritage in China. Kongjian Yu (2006), a professor in the Landscape Design Department of Beijing University, proposed that ‘modern factories constructed by foreign capital industry, Chinese national industries initiated by Westernization Group officers and civil capitalists, and the socialist industries, all tell a series of epic stories about the history. The precious ones of them should be effectively protected.’

Industrial heritage is one part of the city and, to some extent, a part of the history and identity of a city. The objective of landscape design is not only to seek the aesthetic appearance, but also, and more importantly, to reveal its cultural and historical meaning under the appearance. Landscape architects often try to use history in a site or landscape element design.

Therefore, when facing an industrial heritage site, Landscape architects have the responsibility to understand the significance of the site to the whole city and its citizens. According to my research on this, I analyzed the problems, discussed the different options for protection and gave some proposals and arguments for creating reasonable designs which could reuse heritage.

Industrial heritage sites are special. The buildings and machines are huge and solid, and the soil and water may be polluted because of chemical productions. It is such a problematic field that landscape architects should be aware of the problems before they design. Could there be a conscious way to deal with this topic?
My thesis work is divided into two parts. The first part is the investigation, and the second part is the conclusions drawn from the research and some subjective proposals.

My main research question concerned this transformation of a specific period into a designed landscape.

- How the heritage site is constructed and presented into the landscape?

This question focused on the role of a landscape architect in the renewal of an industrial heritage site and how this specific heritage was presented through design. This subject is too wide to deal with in a master thesis work, the investigation was limited to a comparative study of industrial heritage in two cities. One was Norrköping, a traditional industrial city in Sweden, and the other was Shanghai Xu Jiahui Park in China. The question below may be more suitable for a limited research in form of a master thesis:

- How are the industrial heritage sites presented and designed in the case of Shanghai and Norrköping?

The question focuses on the perspective from the landscape architect and the spatial outcomes of the two cases. Using Groat’s classification system, I discussed how the contemporary professionals in Norrköping and Shanghai had acted. To what extent they fit in with Groat’s theory? Could either of the two cases be placed in one of the categories? In conclusion, I wanted to compare the two cases to find out whether Groat’s theory on architecture could also be effective in landscape architecture. According to the investigation, I hoped to present some results to guide the landscape architects; so when facing an industrial heritage, the landscape design could be dealt with in a conscious way.
Chapter 1: Summary of Industrial Heritage Protection and Development

In the first chapter, I will describe the background of Industrial heritage and the related theory. This chapter includes the definition of the term, its development and studies and practices of industrial heritage both in Europe and in China. It also included the five major models of industrial heritage protection and renewal, and Linda Groat’s theory on contextual design which will be used to analyze the cases in the following two chapters.

1.1. The Definition of Industrial Heritage

Industrial heritage is just type of heritage. Before the definition of industrial heritage is introduced, it is necessary to understand the concept of heritage first.

1.1.1. The Concept of Heritage

Heritage is a very broad concept. There is no uniform definition because of its various perspective studies and its changeability through time and across space. In general, it is referred to the inheritances from ancestors, including natural heritage, geographical heritage, tradition, virtual heritage, biological inheritance, industrial heritage, transportation and so on. (Wikipedia, 2009) Professor G. J. Ashworth (2005: 7) interpreted heritage as “that part of the past which we select in the present for contemporary purposes, whether they be economic or cultural (including political and social factors) and choose to bequeath to a future.” In my thesis, the concept of heritage will focus on the heritage site.

To talk about the criteria, the document of ‘Convention Concerning the Protection of the World Cultural and Natural Heritage’ must be mentioned. It was adopted on 16th November 1972 by the UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage Committee. This document divides heritage
into cultural heritage and natural heritage and listed ten criteria for the two categories of heritages. Cultural heritage can be monuments, groups of buildings and sites, while natural heritage consists of natural features, geological and physiographical formations. If a nominated site, which has outstanding universal values, meets at least one of the ten criteria, it can be added in the World Heritage Lists and be protected. (UNESCO, 2009) The ten criteria can give us some ideas about the concept of heritage. However, the heritages referred to in my thesis are not only these sites in the World Heritage Lists. They can have a long history or just be a few decades old. They do not need to have outstanding universal values, but they must be valuable to the locality or the region. If one considers a historical site as a site of heritage, that site can be accessed from three perspectives: architecture, landscape and history. An architectural perspective includes building style, technology and human creativity. Landscape perspective considers the relationship between nature, city planning and the culture, and a historical perspective involves the historical events, historical persons, and common citizens.

In defining this concept, the largest difficulty is that it always changes with time, embodying the ever-shifting balance of continuities and changing characteristics of any society. (B. Graham, 1994)

1.1.2. The Concept of Industrial Heritage

With the development of the economy and technology, new technologies emerge and many factories are made redundant and are forced to close their doors. These occurrences have produced many questions: such as what to do with these empty buildings and plants, what to do with the out-dated machines, and how to deal with the professional skills and the changes of social structures. The first country that faced this transitional problem is the United Kingdom (UK), which is also the origin nation of the industrial revolution. The UK was in search of reusing industrial areas in the 1960s, and Sweden faced the same problem in the following decade. (Annika
Alzén, 1996: 129) Some of the places were reserved and protected, and the concept of industrial heritage came to the stage of history. Therefore, it is a very young member in the heritage family. Generally, industrial heritage refers to industrial space which includes buildings, equipment and lands carrying the history and culture of the industrial production.

The first book that used the concept of industrial heritage was Hudson’s *Industrial Heritage* (1965). In 1973, the International Committee for the Conservation of the Industrial Heritage (TICCIH) was founded. (Wikipedia, 2008) It is an international society to study industrial heritage and it defines the concept of industrial heritage as: “remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education” (TICCIH, 2003).

Strictly speaking, industrial heritage is classified under cultural heritage. It specifically deals with industrial buildings and artifacts. When protected, it can be formed as an attractive place for tourism. (Wikipedia, 2009²)

1.1.3. The Categories of Industrial Heritage

Industrial heritage is a kind of materialization to human industrial culture. As mentioned above, it is part of cultural heritage. According to the classification of cultural heritage, industrial heritage also can be divided into tangible heritage and intangible heritage. Tangible heritage includes movable industrial heritage, immovable industrial buildings and industrial sites. Intangible heritage includes craftwork process, traditional craftsmanship and so on. (Dongjun Pan, 2008:37)

1.1.4. Values of Industrial Heritage

...
According to Dongjun Pan (2008: 37) the Industrial heritage has the following five values.

1) Historical Value

Industrial heritage is the evidence of industrial activities and is a record of certain historical activities. These memorials help people understand the value of industrial civilization, industrial technology, organization, culture and etc. They cannot be replaced by any other type of cultural heritage. Therefore, industrial heritage condenses the universal historical value.

2) Technological Value

Industrial heritage is a reflection of human intelligence, including a great deal of technological inventions and creations, which reveals the order of nature and scientific methods of production and organization. It is beneficial to the progress of science and technology in future.

3) Economic Value

Economic value is represented at the premise of protecting the authenticity and integrality of the industrial heritage. If the sites are developed and reused with respect to their protection, by developing industrial heritage tourism, rebuilding to exhibitions, museums and so on, their economic value will increase.

4) Educational Value

For the purpose of education, especially in history and engineering, relics of industrial heritage are live teaching materials which cannot be replaced by others. Many industrial heritage sites are protected as teaching bases in Europe and the United States. It could be a method to combine industrial heritage protection, exhibition and education together.
5) Psychological Value

A representation of industrial heritage can be a symbol of a city is history, a multi-leveled spirit of the city and a common experience for all citizens. The characteristics of the industrial heritage could be national and regional. They reflect the cultural identity and creative spirit of a nation or a region.

1.2. The History of Industrial Heritage Protection in Europe

In the middle of 19th century, the United Kingdom was the first country in the world which paid attention into the protection of industrial heritage. Studies on industrial heritage protection began to be officially carried out in the 1950s. After 1960s, the studies on industrial heritage experienced fast development. (Annika Alzén, 1996: 129) In the beginning, people failed to understand the value of modern ruins adequately and many industrial sites were gradually dismantled in the process of large-scale urban renewal. This phenomenon got the attention of many people who later became the leaders in the industrial heritage construction movement. They believed that industrial heritage had an important social value because it attested to the development of the city and was a part of the city’s history. With increasing awareness of environmental protection, people had an entirely new understanding of industrial sites renewal. The issues on industrial heritage were no longer only limited to simple protection but also to discover better ways to give these sites new lives. Both the development of science and technology and advances in ecology and biotechnology provided the feasibility for the transformation of industrial waste, taking industrial sites renewal in a wider, more diversified and integrated direction. (J. Alfrey and T. Putnam, 1992: 9)

In the process of industrial heritage study, the Council of Europe and The International Committee for the Conservation of the Industrial Heritage (TICCIH) have both played extremely important roles. The former is concerned about Europe, while the latter is a world-wide organization for industrial heritage. Led and
organized by these two agencies, the studies on industrial heritage protection have experienced a lot of development. A considerable number of research papers and special reports emerged out of the international conferences which were organized by the Council of Europe in 1985 and 1989 and also out of TICCIH conferences. Many of them referred to the study of industrial heritage protection and tourism development. (TICCIH, 2003)

In addition, there are some specific laws and regulations on industrial heritage protection. For example, The Nizhny Tagil Charter for the Industrial Heritage passed on the 12th TICCIH which was held in Russia 2003 is the most famous International Charter on industrial heritage protection. (TICCIH, 2003)

1.3. Studies and Practices of Industrial Heritage Protection in Europe

In Europe, studies of industrial heritage protection have mainly been concentrated in the United Kingdom (UK), Germany, Spain, France, Belgium, Sweden and the Netherlands. However, the United Kingdom has the most prominent achievements and the largest number of researches in the studies of industrial heritage. (Ye Ying-zhou and Li Shuang-yan, 2007) In 1991, Pat Yale (2004) reviewed the study of British industrial archeology and also worked with the industrial heritage tourism resources in the document ‘From tourist attractions to heritage tourism’. He took Canyon Bridge as an example, it was the first British industrial site to be redeveloped for tourism and become a World Heritage site. Yale’s document is a representative achievement which systematically introduces the protection and tourism development of industrial heritage.

Researches are mainly focused on the following aspects. The first is the management and use of industrial heritage. An example is ‘The Industrial Heritage: Managing Resources and Uses’ written by J Alfrey & T Putnam (1992). Other researchers such as P Berckmans and L Gross put forward proposals to view industrial heritage from a
new perspective and analyzed the new value and purpose of use. Furthermore, Bettumo, M Binney and P Eley discuss how to reuse the industrial heritage separately. The second aspect is on the protection of industrial heritage. P Berliet studied the ways and methods of protection, while M Binney and T Aldous analyzed the situation of British industrial heritage and the necessity of protection in UK. The third aspect is on industrial heritage and museums. The fact that museums are often used as the major subject for protection and use of industrial heritage attracts many researchers’ attentions, such as J Bowditch, J Hendricks, B DeCorte (to name a few). (Ying-zhou Ye and Shuang-yan Li, 2007)

In a word, the research track of Western industrial heritage protection and development could also be referred to as ‘Industrial Archeology’. It led to protection issues of industrial heritage, then developed in to the management of industrial heritage and eventually developed into reuse of industrial heritage and tourism development. The industrial heritage protection study which was produced in countries other than China, has received fruitful results, especially on the managing use and protection. The research on the managing use and protection is mainly focused on case studies which have achieved outstanding results in some respects. Taking regional reconstruction and rehabilitation of industrial heritage sites as an example, C Gdaniec researched on pre-industrial cities, F Leloup and L Moyart researched on old industrial areas in Hainaut, Belgium, and G J. Hospers made research on the European Community. (Jiang Li, 2007)

Practices contributed to the studies. In the west, an early example to update and modify industrial waste is the Butte Chaumont Park in Paris which was completed in 1863. It changed an abandoned limestone quarry and landfill to a landscape garden. (Xiang-rong Wang and Jingyan Ren, 2003) After 1960s, with the background of a large decline of traditional industries like coal and steel, many old industrial districts faced a structural crisis. Some successful cases came out. For example, the Ruhr industrial area in German is now famous of redevelopment. IBA-a company which
took charge of the transformations in this area did hundreds of programs in ten years. They tried to discover the best way to utilize each abandoned thing. One of them is Haldenerdignis Emscherblick (Anna Storm, 2008:134), a 60 meters high tetrahedron at the top of a mountain. It is now a landmark of this place. When people climb on it, they get a panorama of the area and can enjoy its illumination at night. (Image 1-1)

1.4. The History of Industrial Heritage Protection in China

As an important part of social heritage, industrial heritage has received attention for its unique value. The protection of industrial heritage has become more common in Western countries, but it is a relatively new term to China which lately entered into the industrial age.

China did not reach the peak period of urban modernization construction until the 1990s. The rapid construction caused a large number of factories’ and industrial buildings’ demolition, which meant that many precious memories were erased from the city. Fortunately, some people began to feel regretful about the disappearances. With continuous improvement of public awareness, people have realized the significance of industrial heritage which exists as a kind of nontraditional heritage; the voices of implementing protection are increasing. On April 18th 2006, the first session on China’s Conservation of the Industrial Heritage was held in Wuxi, which is also called ‘Wuxi Forum’. (Landscape, 2009) This conference founded to the theme of International Heritage Day which is devoted to acknowledging and protecting industrial heritage; and produced the document ‘Wuxi Recommendations’ which aims at strengthening the protection efforts of industrial
heritage. These accomplishments mark China’s first steps into a new stage for industrial heritage protection. Every year, Wuxi Forum is held in Wuxi on April 18th and one international topic will be chosen to discuss thoroughly. This year is the fourth year and the latest topic is on the Conservation of Cultural Route Heritage.

Land resource scarcity and transformation of social aesthetics are both turning points for the reuse of industrial heritage. The primary application originated from industrial heritage tourism. To most people, the tall steel forest and huge plants in old industrial areas are both awful but also inherently attractive. It looks so mystical that some people intend to know them. The development of industrial heritage tourism has begun to meet this requirement and the designers have begun to realize how industrial heritage could be used to attract people. As a result, more and more industrial sites are being changed to open spaces, creative industrial parks, museums and exhibit centers. (Shane Chen, 2008) Today, the redevelopment of industrial heritage has been an opportunity for regeneration in many areas. It is generally believed that the conservation of industrial heritage is not only needed for conserving city memories but also to satisfy the objective demand for urban development.

1.5. Studies and Practices of Industrial Heritage Protection in China

The transformation and redevelopment of some old Chinese industrial bases and the functional replacement of industrial plant have the aim of rapidly developing tourism, and other kinds of industries. So far, some research has produced results related to the introduction of ‘industrial tourism’ activities, its concept interpretation and development, discussion on future development path, the development and research overview of industrial tourism in China and the case studies throughout China. Hui-yuan Liu and Leilei Li (2004) did a series of studies on German industrial heritage tourism. Leilei Li introduced the practices of Ruhr area and the origin of the concept in her article ‘De-industrialization and development of industrial heritage
tourism: the actual process and development model of Ruhr in Germany’. She assessed the developmental situation of Chinese industrial tourism from a western perspective and also discussed the reasons for China’s lack of awareness of industrial heritage and the potential for tourism development. Xiangli Wu researched the tourism development of British industrial heritage. He proposed his own views on China’s tourism potential for industrial heritage, along with his analysis and summary of the case. (Jiang Li, 2007)

Learning from foreign experiences of protecting industrial heritage sites, some Chinese scholars began to carry out exploratory attempts in China. Yi Xu’s research on the redevelopment of urban industrial heritage, Shane Chen’s research on Industrial Sites Park, and Siyuan Wang and Meng Niu’s research on rebuilding of Industrial Wasteland in Modern Landscape promoted the research of industrial heritage protection to benefit tourism in China.

With the studies made by scholars, a lot of industrial sites were successfully rebuilt by the designers. Qijiang Park in Zhongshan City (Turenscape, 2009) which was originally founded as a Shipyard in 1953 was modified for a comprehensive open space in the city in 2001. Now it is a very popular and ecological park for the citizens. (Image 1-2) In some big cities like Beijing and Shanghai, the transformation to industrial parks has attracted a lot of people over the recent years. For example, the 798 Art District in Beijing is a place full of creative products like design, publishing,
exhibition, performance, artists’ studios and other cultural industries which was used to be a large Chinese state-owned factory. (Image 1-3)

1.6. The Major Problems of Industrial Heritage Protection that China Faces

Chinese cities are in the process of leaving secondary industries and moving towards tertiary industries. Large amounts of industrial production are being relocated, following the development of real estate. Many valuable industrial heritage sites are facing irreversible demolition and a lot of precious history is threatened to be lost. It is very important to carry out the identification and rescue of industrial heritage as soon as possible.

In May 2006, State Administration of Cultural Heritage (SACH, 2006) published a ‘Notice on Strengthening the Protection of Industrial Heritage’ to lower-level departments which were at the provincial and autonomous regional levels. It pointed out that conservation of industrial heritage was a new, urgent task for the protection of Chinese cultural heritage. It also listed the main problems for industrial heritage protection that China was now facing. The first problem was inadequate attention. The proportion of industrial heritage sites in cultural relic sites was still low. The second was that there was no official information about the number, distribution or the situation of industrial areas being conserved. This was due to a lack of depth and systematic research, and a serious lack of protection theories and practices. The third problem was that the problems of the industrial sites had been exaggerated. People who wanted to demolish the industrial sites insisted that the sites were heavy polluted and had outdated technology. Forth, the perspective of ‘detailed in long-term and general in short-term’ made many industrial heritages became the victims of urban construction. (SACH, 2006)

For China, the interest in conservation and redevelopment of industrial heritage sites has been increased in recent years. There is still a lot of work to do to form the
system which can carry out the systemic filtering, identification and redevelopment of industrial heritage areas.

1.7. Theoretical Approach

1.7.1 Five Major Models of Industrial Heritage Protection and Development

When facing an industrial site, there are usually four options: demolishing and exploitation, rebuilding new buildings in old style, using old buildings for new purposes, and total protection. Protection is not equal to be forbidden in use. It is clear that protection and exploitation do not completely conflict with each other. Rebuilding old buildings and using old buildings for new purposes are rational options to redevelop industrial heritage sites. The most common models of rational redevelopment include thematic museum model, thematic culture park model, the shopping mall model, art zone model and the community model. (Jing-cheng Zhang, Fan-ying Zeng, li-yong Liu and Guang-yu Liu, 2008)

1.7.1.1. Thematic Museum Model

The thematic museum model combines the cultural relics with the architecture of industrial heritage in the form of a museum to display the production process. It activates the historical and realistic sense of an industrial site and stimulates the sense of communal involvement and identity. In fact, many world famous companies have built their own enterprise museums. For example, the Heineken Experience-Heineken Brewery in Amsterdam (ERIH, 2009) is a museum devoted to the history of the brand in order to sell more beer. The more one experiences the brewery, the better people know about the production and the history and then they spend more money on beer.

1.7.1.2. Thematic Culture Park Model
The thematic culture park model is a popular form of redeveloped industrial heritage sites today. This development model changes the original site to a landscape park in order to provide the unique industrial landscape as an outdoor activity space. According to data review, Seattle Gas Works Park in the United States is officially the first Industrial Ruin Park in the world. After being abandoned in 1950s, Seattle landscape architect Richard Haag redesigned it and the park was opened to the public in 1975. (Wikipedia, 2009)

This model targets the area which in the city center, covering a large area, near residential areas, not allowing high-intensity construction and placing high value on the formal vegetation and equipment. When redeveloped as a park, recreational facilities can be constructed and the public can use the place for leisure and entertainment. By both preserving the historical memory and paying attention to the environmental regeneration, the thematic culture park model aims to be a sustainable development from the economic, social and ecological perspectives. The advantages of this model are obvious, at least in the following three aspects. Firstly, the poor environmental and increasing wane areas can get a recovery and redevelopment. Secondly, maintaining important memorials to industrial history is good for public education and, at the same time, meets the principle of economic saving. Last but not the least, the novel and unique design ideas and methods, such as reservation of the industrial landscape, the cycle use of recycled materials, disposal of polluted soil, as well as the combination of the concept of eco-design and artistic thinking, make people realize the potential value of industrial heritage.

However, the environmental issue is an important factor to the success of the result. Generally speaking, serious pollutants exist in industrial sites and will affect the lives of the entire city if they are not handled properly. So in addition to landscape design, more research should be done concerning how to deal with soil pollution, how to purify ground water and increase the natural vegetation, and how to reclaim abandoned lands and improve environmental quality. (Bai-hui Yin, Hong-gang
1.7.1.3. The Shopping Mall Model

A shopping mall consists of shops, restaurants, cafés, bars and children’s entertainment places. It gathers tourism, shopping, entertainment and leisure together. The industrial heritage areas have the advantage of strong and broad industrial buildings and unique industrial landscapes which can provide the physical structure of a shopping mall. Taking Vienna Gasworks in Austria as an example, there were four huge gas tanks: the first was changed to three hundred Presidential Suites; the second was changed to SA (safe automation system)-class intelligent commercial building; while the other two were changed to a supermarket and a recreation center. The four tanks became the local tourist attraction because of this reconstruction. (Image 1-4, 1-5) Except for the advantaged buildings and landscape, industrial heritage sites which could take this model should also have convenient transport facilities.
1.7.1.4. The Art Zone Model

An art zone is a district full of cultural and creative industries, such as artists’ studios, design and publishing houses and sometimes exhibition spaces. They are all new industries. Because of the cheaper rent and capacious and flexible space of warehouses, artists and creative industries practitioners tend to do their business in the old and abandoned industrial sites. What’s more, the culture and memory behind the industrial buildings can stimulate creative inspiration. The characteristics of an abandoned factory meet the need of the entrepreneurs, most of whom are creative young people with weaker economic strength. The formation of cultural concentration of creative industries brings new vitality to this area and also contributes a lot to the development of the city, like 798 Art Zone I mentioned above.

1.7.1.5. The Community Model

Community is an integral element of urban society. The transformation from an industrial site into a community is economic in urban construction. The old industrial buildings have developed infrastructures and solid main structures; the space between the buildings is open, and the arrangement of buildings is regular; what’s more, the site has its own history and culture. (Zhiqiang Jin and Bo Liu, 2008)

Wanke Crystal City in Tianjin (Landscape, 2009) was the first large-scale community whose theme was preserving historical sites from the industrial age in
China. It was located at the old site of Tianjin Glass Factory and became a residential area in 2003. With the use of rich vegetation and human resources, it was built to be a high-end residential area that had a series of waterworks and advocates eco-environmental protection. The development of the land was based on the continuation of a historical perspective. To maintain the historic style and features of the original buildings, they integrated these old elements into the new buildings. A landscape of avenue and garden which consisted of 600 trees in old base was kept. (Image 1-6) The railway and water tower were infiltrated into the plan and became symbolic elements in the residential area. (Image 1-7)

The five thematic models above are the main renewal models for industrial heritage, but it does not mean that they can only be used separately. Sometimes, two or three models are integrated in one area. Some places maybe also have other models which I did not mention. No matter what model is chosen, the ultimate goal should be to reuse old industrial sites while creating an open space which can be suitable for the needs of modern society, perhaps with high artistic standards, and whose landscape has ecological ideas and technology.

1.7.2 Linda N. Groat’s Theory on Contextual Design

Linda Groat (1994) is interested in contextual design. In order to find out the differences between architects’ and layperson’s perspectives on contextual compatibility; she did a five-year investigation on it. The investigation included extensive interviews with nearly 100 respondents. Considering the important role of the layperson’s evaluations, 73 of the interviews were non-architectures. According to this investigation, she identified four major theoretical perspectives on the contextual design of architecture. They are listed as follows: architecture as a historic document, the importance of visual continuity, deeper levels of significance, and freedom for the creative designer.

Groat’s theory gave me some insights. The theory was about architecture and
heritage. However, could it be also useful in an analysis of landscape architecture and heritage? As a landscape architect, I tried to use this theory in a new context: landscape architecture and industrial heritage. I used her four concepts as an instrument for categorization in order to make a comparison. According to the cases, the center of Norrköping and Xu Jiahui Park in Shanghai, I tried to discover to what extent the theory could be used in landscape architecture and heritage.

1.7.2.1. Architecture as a Historic Document

From this viewpoint, architecture was preserved because of its historical significance. It was related to a historical person or event, or just a record of the evolution of built form. Image 1-8 shows one Chinese ancient building being renovated. It is the Taiping Kingdom History Museum in Nanjing. Today, it records not only the history of this site but also the building form which was constructed in Ming Dynasty. Groat (1994) stated that the perspective most firmly associated with in recent times is the Modernist perspective. Sometimes, the additional buildings beside the original ones
were built in a similar style on purpose because the old ones represented “the spirit of the times” or represented the ongoing stylistic and technological evolution of contemporary architecture. In my cases, the architecture is referred to as landscape architecture, so I have changed this perspective to landscape architecture as a historic document.

1.7.2.2. The Importance of Visual Continuity

Visual continuity is one of the most important and valued qualities of the urban streetscape. (Image 1-9) Sometimes, it also could be one of the identities of a city.

Although visual harmony is a very superficial link between the buildings, it is the primary concern to vast majority of the public. According to Groat’s investigation, this was the only viewpoint validated by the non-architects. Because the visual continuity usually consists of a group of buildings, some degree of replication and small-scale detail and ornament should be added to achieve the visual harmony. (Linda Groat, 1994)
1.7.2.3. **Deeper Levels of Significance**

For the third perspective, Groat (1994) describes that deeper symbolic and cultural relationships are involved in contextual compatibility, which is more than superficial visual continuity among buildings. In my opinion, it seemed to be similar to a historic document but different. The first difference was that the history does not belong to some historical persons, but the visitors themselves. It is something that could inspire the visitors’ memory. Another difference is that the objects in this viewpoint were not solely the buildings, but instead, it also includes the surrounding landscape. For example, Siheyuan is a traditional residential style in China, especially in Beijing. A hotel built in this style can give the guests a feeling of coming back home.

1.7.2.4. **Freedom for the Creative Designer**

The last perspective argues for the importance of artists who expressed themselves through architecture. The artists seem to have total freedom over the design. To some extent, it is difficult, perhaps impossible to establish criterions to estimate whether the building is suitable in the historic surroundings. (Linda Groat, 1994) In order for architects to express change and movement forward, they must create a totally new style against the old which also represents the heritage. Maybe it was strange and controversial at first, but its artistic quality could help it to be a unique sight, and became a historic document as time passes by. Rasin Building in Prague is an example. The creative architect made the building known to the world. (Image 1-10)

1.7.3 **Main Sources of the Two Case Studies**
1.7.3.1.  A Case Study in Norrköping, Sweden

Document


Websites


1.7.3.2.  A Case Study in Shanghai—Xu Jiahui Park

Document

Websites

  http://xhculture.xuhui.gov.cn/WebFront/view_0.aspx?cid=51&id=166 (visited on 12 April 2009)

Chapter 2: A Case Study in Sweden—Industrial Heritage in the Center of Norrköping

Unlike the United Kingdom whose main focus is on preserving buildings of special value and national monuments, in particular, those associated with the industrial revolution; Swedish interest in industrial preservation has taken a different direction. “the Swedish movement had a stronger socio-political focus, where industrial work and the history of industrial workers were deemed to be of greatest significance.” (Annika Alzén, 1996: 129) Norrköping is an industrial city in Sweden which has been successful to drive support from its history and use it for the future.

2.1. The Background of Norrköping

Norrköping is located in Östergötland province in the east of Sweden. It is only about 135 kilometers from the capital Stockholm. The river Strömmen flows through the city. (Image 2-1) Because of this rich water resource, Norrköping is one of the...
earliest cities in Sweden to develop industries and is especially well-known in Scandinavia for its textile industry. The industry here started in the 17th century. In 1627, an important visitor came to Norrköping, the Dutch financier Louis De Geer. Under his auspices, Norrköping established armament manufacturers, paper mills, garment factories and many other industrial factories. One of the existing factories is Holmen Company whose tower is one of the entrances of industrial landscape today. (Image 2-2) Although Louis De Geer is not Swedish, he is deemed to be the father of Swedish industrialism by Swedish people.

Because of the utilization of water power from Strömmen, the factories were built along the river. After the 1850s, Norrköping became a major center for the textile industry in Sweden, and it was called “Sweden’s Manchester”. (Wikipedia, 2009) Most of the existing industrial buildings were built in the period from 1850 to 1920. At that time, the workers were primarily women, and minors. (Image 2-3) However, after the Second World War, with the influx of cheap imported textiles from Japan and other countries, the textile industry in Norrköping faced crises. Factories closed one after another during the next years and in 1970 the closure of last large textile company declared the end of textile period in Norrköping, leaving the silent factories. The machines were either sold or abandoned. (Sven Tynelius and John Lovén, 1982:3) During the idle period, the Council and the trade in Norrköping discussed the fate of the industrial buildings. At last, they decided to preserve them and use them for different purposes.
2.2. From a Center of Industry to a Center of Culture and Education

The first voices raised in favor of protecting the industrial heritage sites around Strömmen were by some teachers and students from the Royal Institute of Technology and the Royal Academy of Art. According to their design works, they demonstrated the future problems in urban planning in Strömmen area. In 1971, a historical and cultural inventory of the entire city was started by the municipality. After three years, the local government decided to classify the Strömmen area according to the results of inventory. In addition, an investigation about social aspects of the area was made by John Lovén (1982:3).

After the comprehensive investigation, they classified the industrial buildings into different levels to protect to different degrees and carry out a plan. At the beginning they attempted to transform the buildings into housing, but in the end, only one of the projects was carried out in 1980. (Leif Sjögren, Nils Ryman and Ulf Arumskog, 1997:12) Today, as result of the step by step transformation, Norrköping is revived as a center of culture and education. It consists of museums, a concert and congress hall, a university, Science Parks, shops and café bars.

2.2.1. The Renewal Models of Norrköping Center

There were so many factories in the center of Norrköping that the renewal could not be put in one model, but instead, the models were diversification. Image 2-4 and the table in Appendix I reveal the information about the former and new uses of the buildings in industrial landscape. The thematic museum model, the shopping mall model, art zone model and community model were all adopted.

In Image 2-4, for the thematic museum model, the Bergsbron (5) and the ‘Flat Iron’ (17) were transformed into the Town Museum and Museum of Work, separately. The Nya Strömen (24) which used to be a snuff factory and flour mill with owner’s
residence has been converted a shopping mall. Some buildings are now the home to the Linköping University and many companies have also moved into this area because of the new university’s coming. For example, old Gryt’s Mill (13) became a computer center as a spin-off of Linköping University. Because the university, new companies and workshops were all places which attracted creative young people, this transformation could also considered as representing an art zone model. Furthermore, a pulp and paper mill (23) has been converted into a concert and congress hall which enriches the local citizens’ lives. This also belongs to the art zone model. Finally, the community model appeared in this area as well. Two new apartment blocks in the north of Strömmen area were previously used as a brewery and cotton mill.

2.2.2. Landscape Architecture as a Historic Document

In the case of Norrköping, many landscape architectures have been preserved. Their existence records the industrial age which gives pride to the citizens. The most distinct buildings in the city are the two museums and the Louis De Geer Concert and Congress Hall.

Arbetets museum (The Museum of Work)

The Museum of Work lies in the midst of Strömmen. It is a unique building with
seven corners, which is known as “the Flatiron”. The seven corners result from the effective utilization of every meter on the little islet. Carl Milles described it as the most beautiful industrial building in Sweden. (Image 2-5) Originally a cotton mill, the museum now represents working life and issues during the period of 1930-1980 to help visitors understand how Sweden became modern. Aside from these permanent collections, the museum also has exhibitions, seminars and programme activities. (Arbetets Museum, 2009)

**Stadsmuseet (The Town Museum)**

The Town Museum is located in the heart of the Industrial Landscape which was formerly used for textile and dyeing mills. Now it tells Norrköping’s impressive textile era via the photos, machines and products. The old industrial buildings are capacious and bright. Light shines in through the large windows. No place is more suitable when it is combined with exhibitions which recorded the industrial age. (Image 2-6)

**The Louis De Geer Concert and Congress Hall**

The Concert and Congress Hall was the former pulp and paper mill for the Holmen Company which was founded by Louis De
Geer. The square entrance was very impressive to me. (Image 2-7) Initially, it was not clear to me that it was a concert and congress hall. In fact, it is not only a place for cultural activities and conferences but also the home of the Norrköping Symphony Orchestra. The hall which was previously used for pulp preparation can accommodate 1300 audience members and the restaurant and foyer which used for paper manufacturing has room for 1100 guests. (Image 2-8) From the panoramic window, Guests who are having dinner in the restaurant can enjoy the splendid view of the waterfall. (Image 2-9, 2-10)

**Landscape architectures except buildings**

Aside from the actual buildings, chimneys and sculptures can also record history. There are many chimneys in Norrköping, they are kept as long as they do not conflict with modern construction, even if they are out of use. Sculptures are new things that are added to the industrial site in order to record some historical person. For example, a statue of Louis De Geer stands in the old Market Square opposite to the hall. The statue is always gazing at his factory and the development of industry in Norrköping. The existence of his statue reminds the citizens and visitors of De Geer's tremendous contribution to Norrköping. (Image 2-11)
2.2.3. The Importance of Visual Continuity

In the center of Norrköping, there is a cluster of old mill factories. In my opinion, the industrial landscape has been preserved in this position. It is still an important part of the urban streetscape and also potential to be a symbol of the city. If Norrköping’s local government preferred to focus on the importance of visual continuity, then they should protect the industrial buildings along the Strömmen River. In fact, they have followed this theory to the existence of redeveloping the buildings in different models. Image 2-12 shows that the municipality of Norrköping has classified the cultural value of industrial buildings on different levels, depending on the visual harmony and the quality of the building. Additionally, new buildings in this area
were also built using this perspective. When the Bergsbro & YFA Mill buildings were transformed into the Linköping University, the old buildings could not alone satisfy the requirements of the university; so new buildings were built beside. The new ones had a similar style with the old ones for the visual continuity.

2.2.4. Deeper Levels of Significance

According to my understanding, deeper levels of significance mean that something is able to not only record the history or reach visual harmony, but is also able to inspire people’s own memory.

One example in Norrköping was the chimney standing in the river beside the Museum of Work, but in fact, it was not a real chimney but a symbol. (Image 2-13) It was a present from the municipality of Norrköping to Linköping University for its coming, which was designed by the artist Jan Svenungsson and constructed in 1999. (Jan Svenungsson, 2009) Jan Svenungsson is a unique artist whose chimney design is one meter higher than the original one. This is his fifth chimney and is 14 meters tall. As for the meaning of its placement standing in the river, different people have different ideas. Some argue that it symbolizes the stagnancy of the industries as if it is the last chimney sunk below the running water, while others think that it is rising out of the water which symbols the university and new companies which give new life to the old industrial area. In my opinion, I agree with the later opinion. It is consistent with the significance of the project of industrial heritage renewal which is reviving the industrial area and preventing the disappearance of the industrial heritage.

Another example of a deeper level of significance is a sculpture named the Banner of Unity. Although most of the sculptures were of people who were important to this
place and to the local industry, this one reflected the common people’s life. The sculptures for important persons are only able to record the history, while this one, which stood in the Skvallertorget market Square, reminded people that it was a place for textile workers to gather and took people back to the scene it represents. (Image 2-14) In this case, the deeper levels of significance would be easier to understand by the old workers.

With the development of tourism and the new university and companies’ coming, a lot of shops, restaurants and cafes are being established around the Strömmen area. When one walks along the narrow street, the paving stones and the rusty windows seem to tell a long story about the place. (Image 2-15)
2.2.5. Freedom for the Creative Designer

The main strategy of industrial heritage protection and renewal in Norrköping is to preserve the industrial buildings and give them new functions. The old building style was represented and very little creative architecture was added to it. One thing that might be taken into account from this viewpoint is the waterfall. There are 13 falls which measure 300 meters long and 18 meters high. Today, the waterfalls are not only used for water power, but also as a characteristic landscape for the Strömmen area. (Image 2-16) Imagining that there were few leaves and short sunlight hours in winter in Norrköping, the designers also thought to add some bright colors to break the monotone of the industrial buildings. Therefore, the largest one of the waterfalls is illuminated. Visitors are able to see the waterfall at the Cotton Mill illuminating in different colours every half hour in winter. Esplanades were also built on both sides of the Strömmen that give people an additional opportunity to appreciate the waterfall and feel the grand view of industrial landscape.

Image 2-16: The Largest Waterfall
Image by the author
2.3. Conclusion

In the case of the Center of Norrköping, the model is complex. It consists of the thematic museum model, shopping mall model, art zone model and community model. In other words, the image of the center of Norrköping has been transformed from an industrial center to a cultural and educational center.

The way in which Norrköping has transformed allows it, to some extent, to fit in to all five values of industrial heritage. The historical value is represented by the museums and sculptures. The information in museums helps people understand the development and culture of the textile industry. The sculptures of important persons to this region tell the history of Norrköping. The town museum exhibits old machines and shows the textile industrial technology, which both has technological value and educational value. In addition, the center of Norrköping also has represented its educational value according to the exhibitions and activities taken in the museums and the coming of Linköping University. The protection of industrial buildings develops the local tourism, which brings economic benefits. The Louis De Geer Concert and Congress Hall is a place for cultural activities, conferences, and especially symphonies. It both promotes the local economy and enriches citizens’ lives. Representative heritage, as it is presented, seems to reach into every aspect of the citizens’ common experience in the city. The sculpture named the Banner of Unity and the rusty window in the new shopping mall also seem to take people back to the industrial age. The psychological well-being is realized when you walk in the narrow street or beside the waterfalls.

Compared with Linda Groat’s theory, the protection and renewal in the center of Norrköping could be placed into the visual continuity perspective. The government realized the significance of the urban streetscape and city identity, and preferred to preserve them with little demolition. Because of this strategy, most of the industrial buildings are well-preserved and new additions are built in similar style to
their older neighboring structures. This means that the architect has a limited ability to be totally free and creative outside the heritage context. The redevelopment of the industrial buildings is bound under the premise of visual harmony. One example that could be discussed as an example of freedom for a creative designer is the largest waterfall, which is decorated with illuminated system and became a characteristic landscape for the Strömmen area.
Chapter 3: A Case Study in China—Xu Jiahui Park in Shanghai

Xu Jiahui is located southwest of Shanghai’s center district. This district was one of the first areas in Shanghai to open their doors to the world. In the 17th century, Xu Guangqi, a well-known scientist in Ming Dynasty, began to communicate with many other countries and share economic, scientific, cultural, educational and religious knowledge, which promoted growth in this region. Many well-known commercial enterprises in history are assembled here, making the region very prosperous. (Baidu, 2008) Now, business here tends to be high-end, mainly in brand-name clothes, luxury goods and electronic products. And the majority of consumers are white-collar families,
young people, electronic goods enthusiasts and tourists.

3.1. The Background of Xu Jiahui Park

Xu Jiahui Park lies in the busy commercial center of Xu Jiahui District. (Image 3-1) From Image 3-2, it is clear that Hengshan Road is lined with lower villas in the front, but high buildings and large mansions behind. Before construction, the site was used for the Great China Rubber Factory and Pathe Company (Electrical and Musical Industries LTD in China). (Image 3-3, 3-4)

The Great China Rubber Factory, which was built in October 1928, is known as the cradle of the Chinese national tire industry. The factory covered 27 acres land. Its successful trial of “Double Money” brand automobile tires in October 1934 broke the monopoly of foreign tires. Image 3-5 is an old advertisement which proudly states that the “Double Money” brand automobile

Image 3-3: The Site before Transformation
http://sh30.microfotos.com/pic/0/17/1730/173044preview2.jpg

Image 3-4: Old Plant Inside
http://www.tme-sh.com/lsh/webs/a/lt03.htm

Image 3-5: Historical Advertisement of “Double Money” Brand Automobile Tires
http://www.tme-sh.com/lsh/webs/a/lt03.htm
tire was the only tire produced by Chinese. This poster records a historical age. In the 1935 “Chinese General Chamber of Commerce domestics Exhibition” held in Singapore, the tire received a top award. The factory operated well and in 1937, its capital reached to 300 million Yuan and the number of employees was 2,860. At the time, this capital accounted for a quarter of the trade in China and or one third of its production value. (Xuhui Culture, 2007)

3.2. From a Factory to a Public Space

However, with the coming new century, the factory has received a new life. From the construction perspective, the increasing high-rises make the space more crowded and closed. The traffic was heavy and noisy. Previously, air and sound pollution made by Great China Rubber Factory had affected not only the quality of the commercial area, but also the residents’ lives and traffic. Data from the green lands structure in Xujiahui Region shows that the public green space only accounts 1.12% (before 2000) of the total land. (Baidu, 2008) The small proportion of green space reflects back to region’s lack of open space for residents. To improve the overall competitiveness in Xujiahui District, the government wanted the factory to move out and rebuilt a park instead. The green space was supposed to improve the polluted environment, while a new open space in a crowded area had the possibility to attract more shoppers and tourists which was positive for the region’s long-term development.

On November 30th 2000, with a blasting sound the last of the plants were razed to ground and the factory moved to the new Minhang District of Shanghai. There it combined with Zhentai factory and set up a new company. (Xuhui Culture, 2007)

3.2.1. The Renewal Model of the Great China Rubber Factory

There was ever any doubt that the Rubber Factory was to follow the renewal model and be a thematic culture park. But the theme was not wholly consistent with its
former industrial heritage. It instead focuses on many major changes in culture and history in Shanghai, with the Great China Rubber Factory as just one part of the theme.

The design of the park was collaboration by W.A.A. Landscape Design Firm from Montreal, Canada and the Shanghai Landscape Design Institute. It would be constructed as a modern artificial green space in accord with the business development plan and as an improvement to its surrounding living environment. The whole redevelopment is divided into three sections. Section one is dedicated to the former Great China Rubber Factory, covering 3.3 hectares. The signs of this first section are the large chimney and Aerial Bridge throughout the park. Section two is the original Pathe Company. It covers an area of 3.7 hectares, retaining the La Villa Rouge and some large, old trees. The last section is the smallest, which is only 1.47 hectares. Here, they have added some places for mass sport fitness like basketball courts and a mini-soccer pitch into the green space. (Wikipedia, 2009)

3.2.2. Landscape Architecture as a Historic Document

In preparation for the new park, the rubber factory destroyed all the industrial buildings when they left. The only industrial heritage that was preserved is the chimney and the only architecture is the cultural heritage La Villa Rouge which belonged to the Pathe Company and has been redeveloped to be a thematic restaurant.
Their existences record the history of the site.

**The large Chimney**

The large chimney is the only existing industrial heritage of the factory and on August 28th 2007 was registered as an immovable cultural relic by the Cultural Department of Xuhui District. And now it is the landmark of the park. (Image 3-6) The preservation of the chimney aimed at commemorating the factory’s contribution to the rubber industry and green business. The base has been a granite hexagonal shape which decorated with the plane of the park, the drawings of the rubber factory and the Pathe Company. It tells the history and introduces the present of the site which is educational to future generations and evokes nostalgic memories in the minds of the older generation. (Image 3-7, 3-8)
La Villa Rouge

La Villa Rouge is situated in the north of the park, near Hengshan Road. It is a red French-style three-story villa, which records the history of the Pathe Company. The villa is well preserved, because it was not only the first record producing studio in China but also the first record base in Southeast Asia. (Image 3-9, 3-10) The Pathe Company in Shanghai popularized a number of big stars in 1930s and 1940s. In the past, the first floor was used for recording and reception, the second floor was the editing room, while the third floor was living room and bedroom for the employer. (Jianguo Liu and Yuhua Wang, 2001) Because its history only belonged to the big stars and the producers, La Villa Rouge is still a significant place. Today it has been transformed to a restaurant and pub that is open to the public, but the style of decoration inside is unchanged, which can take people back into the golden age. (Image 3-11)
3.2.3. The Importance of Visual Continuity

Surrounding Environment

Xu Jiahui Park was designed from the perspective of visual continuity. To build a park, it is always necessary for landscape architects to do an investigation of the surrounding environment. That is because visual continuity is one of the basic principles in landscape design.

Xu Jiahui Park has a special location. It lies in the busy commercial center of the Xu Jiahui District. Hengshan Road is to the north of the park, which used to be the French Concession in the past and is famous for its cultural characteristics today. There is a lot of distinctive European style architecture and tall trees along the road. (Image 3-12) Zhaojiabin Road is to the south of the park, and is lined with many tall modern buildings. (Image 3-13) In order to be consistent with the visual continuity of both roads, the designers decided to base the theme on the changes in Shanghai in order to bridge the two areas.

![Image 3-12: Hengshan Road](http://www.elong.com/travel/shanghai/shanghaigouwuxiuxian_5.html)

![Image 3-13: Zhaojiabin Road](http://www.flickr.com/photos/qiaomeng/279009111/)

It is also important to note that the buildings on Hengshan Road beside the park have been protected, as they are important to the urban streetscape. Typically, some degree of replication is made for achieving apparent visual continuity.
Visions in the park

Not only the surrounding environment is visual continuity, the park’s landscape is also visually continuous. The park’s style is mixed. There are both traditional Chinese garden elements in it (landscape of Yuyuan Garden) and also western regular design (Image 3-14). The different styles represent the old city region of Shanghai and also the modern Art Deco District. However, there is an Aerial Bridge throughout the park which works to string them together. When walking on it, people could see the yesterday, today and tomorrow visions of Shanghai continuously. And when looking up to the Aerial Bridge, one can see that it is designed to look concise and modern, fitting in with the modern tall buildings behind it harmoniously. (Image 3-15) In this way, it is a media for visual continuity in the park.

3.2.4. Deeper Levels of Significance

Chinese landscape architects usually prefer to make designs with deeper levels of significance. The case of Xu Jiahui Park is not an exception. Many elements in the
park followed this perspective.

First, the layout is similar to the territory of Shanghai. The shape of the artificial lake in the park is just like the bent Huangpu River, and four little bridges were set up over the lake. They symbol the Xupu, Lupu, Nanpu and Yangpu Bridges separately which are the four bridges across the Huangpu River in Shanghai. (Image 3-17)

![Image 3-17: Relationship between the Territory of Shanghai and the Plan of Xujiahui Park](image)

Edit on Google Earth by the author

Secondly, the Aerial Bridge represents the viaduct. Since Shanghai is very crowded, viaducts are very important to the traffic system for the city. Walking on it seems like unfolding a scroll which records the history of Shanghai. It shows the images of the city from the past to the present and from the present to the future. What’s more, the Aerial Bridge is also people-oriented. The small raised dots on the bridge make up a path for the blind, so blind people can have the same opportunity to enjoy the experience. The height of the railings is within the security scope, and the top of the railings are made of wood which would not be too cold or hot with the change of temperature, so people can easily use them. The walking path is also made of wood,
which is soft and skid proof, and the drainage system is well considered. (Image 3-16)

Finally, landscape architects used groups of shrubs to symbol the old city region in Shanghai. (Image 3-18) Their ambition was to easily inspire the local citizens’ memory.

3.2.5. Freedom for the Creative Designer

Because almost all the old factory buildings were demolished, the designers had complete freedom over the park design. The designers could ascertain a theme first, and then add any element they want.

One creative element is the Aerial Bridge throughout the park. In total, it stretches about 200 meters. It was so long that the scale and structure of the bridge was a big
challenge to the designers. At last, the designers made it out and it became one of the biggest landmarks in the park.

Another creative thing was the chimney. The Shanghai Landscape Design Institute decorated it and added something on the top, making it the official symbol of the new park. The original height of the chimney was only 28 meters. When doing the transformation, they wrapped a layer of special material which was similar to fiber cloth on the surface of chimney in order to prevent corrosion and increase reinforcement. They also installed a new stainless steel device, which was a hollow cone covered with optical fiber inside, on the top of the chimney. This device made the chimney 11 meters higher than before and it simulates smoke emitting out from the chimney when turned on. (Xuhui Culture, 2007) The reconstruction gives new life to the abandoned chimney. Today, people can also see the birds’ nests in the holes in the chimney. (Image 3-19) This reflects the improved environment and that the park is very ecological.

A third creative thing is the artificial river. In China, water is a very important element in Landscape Design because it adds a dynamic element to the landscape, and access to it is considered as essential to the human nature. A place without water will seem to be monotonous and spiritless. Although it was not easy to create a river in an industrial site, the park copied the shape of curving Huangpu
River to symbol the territory of Shanghai. In addition, it is common for Chinese to establish some kiosks, corridors or bridges around the river or lake. (Image 3-20) The lake, bridges and stepping-stones met the modernists’ desire of accessing water. Ducks run on the grass or swim in the river, birds are skipping under the trees near the bank, and there are also fish in the river. In a word, although the lake is artificial for the park, it looks natural and ecological.

There are many other designed elements in different styles. Some are modern while others are traditional, some styles belong to China while the others belong to western countries. By mixing so many opposing elements, landscape architects had the intention to enforce the image of Shanghai as a historical but lively, local but international city.

In addition, to creating a beautiful ecological green space, the park also had to meet the needs of modern service functions. For example, there are bus stations, public telephone booths around the park, a large underground car park, toilets and barrier-free accesses for disabled people. How to arrange the service facilities is also a creative task for designers.

3.3. Conclusion

The case of Xu Jiahui Park in Shanghai is a typical example of a thematic culture park model. It was transformed from a rubber factory to a public space. In my opinion, it does not express all the five values of industrial heritage. The only preserved artifacts are the large chimney and La Villa Rouge. After the transformation, they represented the surrounding landscape rather than the history. Next, the park does not show the technology of producing rubber products. Instead, it presents new technologies, such as the smoking device added on the top of the chimney and the construction of Aerial Bridge. The economic value was not direct. In other words, the government does not get economic benefits from the park directly. However, because the park improves the environment, it attracts many visitors and
raises the value of the land around the park, which benefits the economic
development of Xuhui District. Although little history is recorded in the park; the
large open space makes the possibility of open air exhibitions and activities like the
English corner, which has potential to be a place for education. The planners at least
seem to value a park with the potential to offer the citizens a place for recreation and
psychological well being. Because the local cultural identity and regional
characteristics represented in the park could inspire the citizens’ memories and
experiences, they represented the landscape according to these elements.

When assessed with classification of Linda Groat, to some extent, the case of
Shanghai fits into Linda Groats’ categories. The demolishment of almost all the
buildings shows that the historical value of old industrial buildings is not valued.
They are destroyed instead of being restored and the few artifacts left are more like
decorations in the landscape. The designers, who have the freedom to creatively
design, add these few artifacts into a construction of the image of Shanghai. So in the
case of Xu Jiahui Park, to some extent, it fits into the perspective of freedom for the
creative designer. However, the designers’ large amount of freedom results in the
industrial heritage being subordinate to the landscape design and therefore not being
that well expressed.

Linda Groat’s theory is only focused on architecture. Because of this narrow focus,
the ecological benefits from the new vegetation do not fit in any of the four
perspectives.

Vegetation is an important part in landscape design which often helps to display the
industrial heritage site. In the case of Xu Jiahui Park, early before the design, the
government received many letters and telephones from the citizen who declared that
they want more trees and less lawn. Although lawns provide broad sight lines and
nice landscape views, the major ecological benefits are occurring far below. As a
result of the large public outcry, the government decided to reduce the proportion of
hard landscape and use that space for trees. When they did the replanting, the big
challenge was to find plants that could be put into partly polluted soil. Finally, Shanghai Landscape Design Institute selected the appropriate local plants. These plants survived easily after being replanted and saved a large amount of money on the construction. For example, ‘Magnolia denudata’, ‘Magnolia grandiflora’, ‘Elaeocarpus prunifolioides’, and ‘Lagerstroemia indica Linn’ were planted at the south entrance, while ‘Salix babylonica Linn’ and ‘Pterocarya stenoptera C. DC’ were planted along the river; and ‘Iris tectorum Maxim’ and ‘Nymphaea tetragona Georgi’ were planted in the river. They considered seasonal changes and space arrangement when choosing the variety. One way of planting, called layered planting, has been especially advocated by Chinese landscape architects in recent years. It meant that planting trees, shrubs, flowers and grass all in one limited space could get a higher ecological benefit.
Chapter 4: Comparison and Conclusion

4.1. A Comparison between the Center of Norrköping and Xu Jiahui Park in Shanghai

According to my two study cases, we can see that they have similar backgrounds and transformations. Both cases are located in the center of a city or a district close to the commercial center, and both transformations are from industry to cultural sites.

However, the differences are distinct. Firstly, although they have similar location, they have totally different ways to deal with the industrial buildings. Norrköping preserved almost all of them and added new ones that were consistent with the old style. Xu Jiahui Park, on the other hand, nearly demolished all the buildings and created a new park. Secondly, the transformation model in Shanghai is only the thematic culture park, but that of Norrköping is complex and includes the other four models. Thirdly, compared to Groat’s categories, the center of Norrköping, to a large extent, fits into the importance of visual continuity perspective, while the Xu Jiahui Park should be placed in the category of freedom for the creative designer. Fourthly, when it comes to the valuation of industrial heritage sites according to the five models discussed earlier, the outcome for the two parks are also different. Norrköping appreciated historical value and attempted to preserve the old industrial buildings; meanwhile, Xu Jiahui Park destroyed almost all of the old buildings and used the few remaining artifacts as decorations. It seems that historical value, in the case of Xu Jiahui Park, is not a strong priority. As for the technological value, Norrköping has an entire museum to represent the textile industrial technology which is famous in local area; Xu Jiahui Park only displays new scientific technologies according to its renewal chimney and creative Aerial Bridge. Next, in the case of Norrköping, it seems that the economical benefit that can come out of the project is a bigger consideration than in Shanghai. Both promote the development of tourism to attract more people’s coming. While Xu Jiahui Park concentrated on improving the
environment and promoting economic growth in the surroundings.

4.2. Conclusion

After completing the investigation and comparison, I reached a deeper understanding in the meaning of industrial heritage. Coming back to the description of heritage by Professor G. J. Ashworth, I discovered three more things. Firstly, heritage could be labeled as ‘use of history’, that was something out of use but is now presented for contemporary purposes. Secondly, there are some criteria to select which industrial sites should be worthy to preserve while others could be discarded. Thirdly, the method of how to protect and reuse the heritage should be considered as well as its meaning for the local to their future generations.

The two cases studied here in relation to Groat’s categories and the corresponding five models indicate that the use of history, it is acceptance, and the success for the project, are closely correlated. It is not possible to point out one model or one way to success. The specific choice depends on the background of the heritage site and the needs of the citizens. Any of the models can be used solely, and can be jointly used with the others as well. We also have to consider the fact that there could be other ways to deal with these kinds of issues: other models can be created using the five major ones just as references.

Learning how to value industrial heritage sites and the five types of values related to industrial heritage are meaningful lessons for landscape architects. When facing a plan, one could reflect over how to relate to these values, which should be prioritized, which could be subordinated, should all five values be included in the project or must all values be fulfilled at one site in order to be considered as a successful redeveloped industrial heritage site.

My comparison between the center of Norrköping and Xu Jiahui Park in Shanghai has resulted in many thoughts on how to deal with landscapes in an industrial
historical context. For example, the outcomes of the two sites differ according to different regional situations and different demands. Firstly, the transformation of Norrköping did not start until the factories were abandoned. In case of Shanghai, however, the idea of transformation appeared for the purpose of improving the regional environment and providing an active space for the public; at the same time, the rubber factory is still operating well in another location. This means that the transformation in Norrköping is a reaction while Shanghai is active. Secondly, it is possible for Norrköping to preserve so many old industrial buildings in the center of the city because Sweden has a lot of open space available and the country is not so densely populated. This situation is opposite to China. There are so many people in China that the land in center of the city is extremely expensive, especially in a metropolis like Shanghai. The lower industrial buildings cannot satisfy the aim of regional economic development. However, when the park was constructed, the environment became improved and popular for the public. In my opinion, the importance of the industrial history is not as highly valued as expressed. The comparison between the two sites in Norrköping and Shanghai have inspired me to emphasize the importance for landscapers to have an clear objective and a well considered perspective before they create the plans for a site of this type.

Finally, could Linda Groat’s system of categories be useful for landscape architectures? The four categories could be used as the departure point for discussion in order to create a strategy for a new site--what is our purpose, and what will we achieve? And I just would like to add one thing: how to maximize the ecological benefits.

As mentioned above, before a landscape architect starts a new heritage project, he or she should consider the categories in order to decide what is important to achieve. When they make a decision, they should know which way to go and how to deal with the industrial heritage in a conscious way.
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# Appendix I

Table: Norrköping-the industrial landscape buildings and their uses-then and now

<table>
<thead>
<tr>
<th></th>
<th>NAME</th>
<th>FORMERLY</th>
<th>NOW</th>
<th>Constructed</th>
<th>Present Main Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DRAG’S MILL</td>
<td>Woolen mill (17th C-1854)</td>
<td>University and new apartments</td>
<td>-</td>
<td>1856-1912</td>
</tr>
<tr>
<td>2</td>
<td>NEW HYDRO-ELECTRIC POWER STATION</td>
<td>-</td>
<td>-</td>
<td>1991</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>BERGSLAGSGÅRDEN</td>
<td>Merchantä s house &amp; dyeworks</td>
<td>Club house, cultural activities</td>
<td>-</td>
<td>1743 move to this site</td>
</tr>
<tr>
<td>5</td>
<td>BERGSBRON</td>
<td>Textile mills, dyeworks, ower’s residence &amp; restaurant</td>
<td>Town Museum (1981-)</td>
<td>-</td>
<td>1750-1937</td>
</tr>
<tr>
<td>6</td>
<td>SMEDJEHOLMEN</td>
<td>Woolen mill</td>
<td>Youth centre, gym, restaurant</td>
<td>-</td>
<td>1895-</td>
</tr>
<tr>
<td>7</td>
<td>KVARNEN</td>
<td>Flour &amp; Textile mills (1855-1900)</td>
<td>Classrooms workshops, warehousing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>BERGSBRON-HAVET HYDRO-ELETTRIC STATION</td>
<td>-</td>
<td>-</td>
<td>1923</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>GAMLÅ BRON</td>
<td>Woolen mill (1890-)</td>
<td>Furniture market</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>KROKEN</td>
<td>Woolen mills (1906-44)</td>
<td>Skandia Insurance Co’s archives, restaurant school, workshops, warehousing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>BUSKEN</td>
<td>Brewery</td>
<td>Apartments in old buildings and new blocks</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No.</td>
<td>Site Name</td>
<td>Description</td>
<td>Function</td>
<td>Year Range</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------</td>
<td>-------------------------------------------</td>
<td>------------------------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>THE ‘TUPPEN’ SITE</td>
<td>Cotton mill (-1969)</td>
<td>New apartment blocks</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>GRYT’S MILL</td>
<td>Cotton mill (-1960s) Hydro-electric station (1936-91)</td>
<td>'ProNova’ computer center</td>
<td>1859-1917</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>BERG’S MILL</td>
<td>Cotton mill, hydro-electric station</td>
<td>Hotel, classroom, party empty</td>
<td>1847-1965</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>STRÖM’S MILL</td>
<td>Textile mill (-1960s), hydro-electric station</td>
<td>Workshops, restaurant, warehousing</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>THE C. L. SVENSSON</td>
<td>Woolen mill (1900-)</td>
<td>Classroom, restaurants</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>THE ‘HEATING CHURCH’</td>
<td>Steam power station (1927-58)</td>
<td>Empty-exterior restored</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>THE HOLMEN COTTON SPINNING MILL</td>
<td>Spinning mill (-1967)</td>
<td>Under conversion for university</td>
<td>1855-1956</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>TELIA HOUSE</td>
<td>Offices and paper mill</td>
<td>Reconstructed 1991 as office for Telia</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>THE HOLMEN TOWER</td>
<td>Office for the Holmen Company (1750-)</td>
<td>Offices for the developers, Holmenbyggarna</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>LOUIS DE GRRE CONCERT AND CONGRESS HALL</td>
<td>Pulp and paper mill (1946-52)</td>
<td>Concert and Congress Hall (1994-)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>NYA STRÖMEN</td>
<td>Snuff factory and flour mill with owner’s residence</td>
<td>Warehousing, shops, offices</td>
<td>1767-1899</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Norrköping Municipal Planning office, 1997)

(Leif Sjögren, Nils Ryman, Ulf Arumskog, 1997: 12-13)
Appendix II

The flow chart of the thesis:

Introduction

Definition

Development

Five models

Case 1
In the Center of Norrköping Sweden

Case 1 Conclusion

Linda Groat’s theory

Case 2
Xu Jiahui Park in Shanghai China

Case 2 Conclusion

Comparison

Case 1 Conclusion

Conclusion

- Architecture as a Historic Document
- The Importance of Visual Continuity
- Deeper Levels of Significance
- Freedom for the Creative Designer