THE CONSERVATION PRINCIPLES FOR THE BRICK AND TILE FACTORIES IN ESKİŞEHİR

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ABSTRACT

THE CONSERVATION PRINCIPLES FOR THE BRICK AND TILE FACTORIES IN ESKİŞEHİR

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The aim of this thesis is to develop conservation principles for the brick and tile industry in Eskişehir, one of the symbolic industrial cities in Turkey where brick and tile has been the significant production from the Early Republic Period.

The conservation of these structures, complexes and mechanical elements is a controversial issue owing to their physical, economical, social and administrative values. The principles how to conserve and why is searched through discussions on conservation approaches, development plans and values. Focusing on this aim, this study is structured in six parts as the research on industrialization and industrial heritage, review and discussion of value types, survey on brick and tile industry, the value assessment process for the factories with the proposed value types and the implementation of conservation principles.

In conclusion, the development of principles is an essential process in conservation of cultural heritage. This thesis proposes conservation principles over physical, social and administrative structure for industrial heritage for brick and tile factories in the Eskişehir Industrial Area.

Keywords**:** Industrial Heritage, Conservation Principles, Brick and Tile, Eskişehir

ÖZ

ESKİŞEHİR TUĞLA VE KİREMİT FABRİKALARINA YÖNELİK KORUMA İLKELERİ

Tülce, Ayten Hüma
Yüksek Lisans, Restorasyon, Mimarlık Bölümü
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Bu tezin amacı Erken Cumhuriyet Dönemi'nden bugüne kadar tuğla ve kiremit üzerine sembol bir kent olan Eskişehir'de yer alan tuğla ve kiremit fabrikalarına yönelik koruma ilkeleri oluşturmaktır.

Fabrikalar bölgesinde; fiziksel, ekonomik, sosyal ve yönetsel değere sahip endüstri yapı, kompleks ve mekanik elemanlarının korunması tartışmalı bir konudur. Endüstri mirasının nasıl ve neden korunacağına yönelik ilkeler; koruma yaklaşımları, imar planları ve değerler tartışılarak değerlendirilmiştir. Bu amaç çerçevesinde, çalışma altı bölümde yapılandırılmıştır; endüstri ve endüstrileşme üzerine araştırma, Eskişehir tuğla ve kiremit endüstrisinin incelenmesi, fabrikalar için değerlendirme sürecinin uygulanması ve sonucunda koruma prensiplerinin oluşturulması.

Sonuç olarak, kültürel mirasının korunması için koruma ilkelerinin oluşturulması önemlidir. Bu tez Eskişehir'de yer alan tuğla ve kiremit fabrikalarına yönelik ilkeler önermektedir.

Anahtar Kelimeler: Endüstri mirası, Koruma İlkeleri, Tuğla ve Kiremit, Eskişehir

To My Family

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CHAPTER 1

INTRODUCTION

One of the major transformation of the cities that created a differentiation in patterns of settlements occurred with the rise of the industrialization in the 18th century. With the development of a new form of urbanism from an agrarian to the industrial city; the change in technology, economy and society as emergence of new patterns of works and social arrangements were based around ownership of industrial production and possession of factory-based work skills. The change in urban structure indicated itself in architectural environment with the emergence of new building types. In addition to the monumental buildings and civil architecture that had been around for centuries, single industrial structures of different scales and complexes with service units; as well as urban residential districts close to the new forms of employment were formed. So the expansive industrial areas with the structural and mechanical elements became an essential part of the industrial cities. This development showed itself in the new type of cities such as Manchester (England), Oregon (USA), Pittsburgh, cities of the Ruhr region (Essen, Germany) and Lille (North East France).[1]

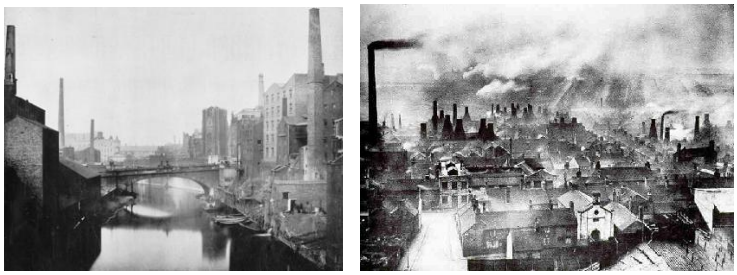


Figure1: a) Manchester in 1843 (*http://www.makingthemodernworld.org.uk/,* accessed on September 01, 2011) **b)** Oregon in 1800's (*http://geopolicraticus.wordpress.com,* accessed on September 01, 2011)

In the first era of Industrial Revolution, the industrial structures and complexes were located in the city center; owing to the connection to the transportation possibilities, infrastructure system and consumer.[5] Beginning from 1950's, ended their production function and moved out of center; due to the technological improvement with expansion in production area,

[1] Thorns, David, 2002, *The Transformation of the Cities,* Palgrave Macmillan, New York
[2] Morin, Bode, 2009, "US Heritage Conflicts with Environmental Mediation", *www.ticcih.org,* accessed on November 12, 2010)
[3] TICCIH, 2003, The Nizhny Tagil Charter for the Industrial Heritage, Moscow. "This charter is prepared by The

locating in the city centre, becoming old, social, administrative and economical causes. In recent years; the new trend that applied for industrial areas, located in city centre, is "the remediation of environmental contamination."[2] By these reasons; the remaining structures and complexes in the centre are subject to the different approaches in Turkey and in the world; that are abandonment, demolishment or due to many reasons, the regeneration through various interventions. So; the remaining structures and complexes in the city center can become derelict such as Beykoz Leather Factory (İstanbul). The factories due to the lack of conservation can be demolished as seen in the Maltepe Gasometer Complex (Ankara), the Isle of Dogs in Docklands (London). By reasons of the physical, administrative and economical structures; central location and high commercial value of the industrial areas; they can be regenarated. The transformation process has different approaches in terms of physical interventions, reuse proposals, administrative and economical structures. In the world, this process started in the 1950's in England. For instance, the Zeche Zollverein XII Coal Mine Industrial Complex regenerated to the Emscher Park (Germany), Ironbridge Gorge Coalport to the museum (England). In Turkey, the transformation examples have been introduced in the recent years. The examples can be Silahtarağa Electric Power Station regenarated to "santralistanbul", Cibali Tobacco Factory to Kadir Has University; Terkos Pumping Station to Water Civilization Museum, Railway Repairshop to "Cer Modern" Art Centre. The terms of conservation of the industrial heritage on different scopes are involved to these transformations.

At the present, the industrial heritage is a significant element of the urban identity. The definition of industrial heritage is stated in the Nizhy Tagil Charter as "…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."[3]

Conservation consists of the developments on understanding and caring for a place, on the purpose of safeguarding its cultural heritage value with respect to the authenticity and integrity, to ensure the values to be interpreted by the future generations. The awareness for conservation of industrial heritage arose in the mid-20th century. The term "industrial archaeology" was introduced in 1955 and defined as a term which involves the tangible and intangible remains, documents of industrial culture, the structures constructed by industrial techniques, its landscape and settlements.[4] The international organizations ICOMOS and

[2] Morin, Bode, 2009, "US Heritage Conflicts with Environmental Mediation", *www.ticcih.org,* accessed on November 12, 2010)

[3] TICCIH, 2003, The Nizhny Tagil Charter for the Industrial Heritage, Moscow. "This charter is prepared by The International Committee for the Conservation of the Industrial Heritage, TICCIH which is the world organization representing industrial heritage and is special advisor to ICOMOS on the subject." *(www.ticcih.org,,* accessed on November 12, 2010)

[4] TICCIH Official website, *www.ticcih.org*, accessed on January 12, 2011; refer to Chapter 2 for

UNESCO started to consider industrial heritage and published international documents. Other international and national organizations are TICCIH, ERIH, ICOHTEC, SHOT, NEKTAR, E-FAITH, DOCOMOMO Türkiye, ÇEKUL. However in Turkey, the subject has been introduced in recent years. The qualitative and chronological criterias of industrial heritage are not entirely determined according to the conservation necessities. So the conservation and preservation of industrial structures and complexes is undefined and solutions according to the industrial heritage type should be originated.

Along with formation into a Republic, one of Turkey's goals was establishment of modern industriliazed cities. İzmir İktisat Kongresi (İzmir Economic Congress), Tesvik-i Sanayi Kanunu (the Law for Encouragement of Industry) and five-year industrialization plans were steps for an industrialized country. Ereğli, Karabük, İskenderun, Kayseri, Zonguldak and Eskişehir were the cities chosen for the industrialization according to the specific production type, that were oriented by the raw material. Eskişehir with its central location and accessibility to the transportation systems has a significant place on tile and brick production since the foundation of the Turkish Republic. Between 1928 and 1950's, many brick and tile factories were constructed in the factory district. After 1950, the production technique of the factories were changed that resulted in the small but numerous structures transformed into one massive structures. The changing global financial systems and entrance of free market economy showed itself in privatization. The factories were closed in 1990's related to the environmental contamination, causing danger structurally and economical decisions of the municipality. However many of the production function were transferred to the new factories that are out of the city. The plans for the area were improved by the municipalities by not considering the significance of the industrial heritage. So the structures and their components that indicate an identity of a period and production technique should be evaluated with their physical, social and economic values.

1.1. The Problem Definition

Eskişehir with the industrilization policies of the Turkish Republic, was chosen for an industrial city, which was particularly based on the brick and tile production. Between 1925 and 1950, the industrial buildings and structures started to be established in the area where is close to the railway. The improvements in technology that effects structures and complexes in the factory district were occurred till 1975. The factories ended their production and moved to the Organized Industrial Zone which was out of the city (on the East part of Eskişehir) due to the decisions of the municipality in 1980. So the production function of the factories were forced to be ended; due to structurally causing danger and "the remediation of

detailed information on the subject.

environmental contamination". As a result, the area became derelict. With the establisments of the Anadolu University which is located close to the area, cause the increase in student population. The area become in the city centre, the land values have been rised. So the new structuring for the residents of the students and commercial units have been constructed particularly in the periphery of the area that influences the planning decisions on the area.

Today, there are five brick and tile factories remaining, which are examples of Early Republic Period, are Kılıçoğlu Factory (1926), Kurt Factory (1928), Çiftkurt Factory (1933), Kartal Factory (1944), Doğan Factory (1948). The factories have different physical conditions however all of them are derelict, except Kurt Factory which was transformed into the Espark Shopping Mall in 2007.

The factories had not been considered as industrial heritage examples for a long period of time and it was lately registered in 1997. Beginning from 1956 six development plans were formed for the industrial area. The term of industrial heritage and different types of industrial structures and complexes are not taken into consideration in all of the plans. In the last 2011 plan, although the Conservation Area was determined, an integrated approach for the area in urban scale was not proposed. The planning was formed by not considering the area as an industrial heritage site, however designed as a new development site to obtain economical advantages. With this aim, the decisions are taken according to the single building lot scale to increase density of restructuring. Another problem is the commercial value of industrial district that causes some debates between municipality and land owners by reason of usage decisions. Altough the approval of the sites as an archeological area was obtained such as Odunpazarı Historic Area[5], the factory district with its values and significances are ignored.

The registered structures, mechanical equipments, open areas and site boundaries are not conserved and exposed to the physical damages. The industrial structures and complexes include "buildings and machinery, workshops, mills and factories…" as determined in The Nizhny Tagil Charter (2003) for the Industrial Heritage. Nevertheless, in the factory district, these elements were not realized as heritage; the mechanical components moved by the landowners and the structures are remained as a core. One of the problem of the industrial heritage in Eskişehir is that owing to the disuse of these structures and complexes; they are neglected, partially destroyed or totally destroyed for new uses. As a case in point is that; the registered Mühendisler Flour Factory, established in 1953, was fired overnight to construct Özdilek Shopping Centre. The regeneration projects (The Aral Wine Factory to Hayal Kahvesi, Öç Tire Rim to Buda Club…) which were applied for the industrial structures

[5] Odunpazari in Eskişehir has historical indications from the periods of Seljuk, Ottoman and Turkish Republic with the konaks, historical residences that constitute of traditional civil architecture, express the family life and traditions of the time.*(http://whc.unesco.org/en/tentativelists/5733/,* accessed on September 01, 2011)

are disputable about their interventions. The Kurt Tile Factory is an example of regeneration which was demolished in 1997. The smoke stacks and some units were reconstructed symbolically for the transformation into tthe Espark Shopping Centre.

Figure 2: The Mühendisler Flour Factory (The archive of the Tepebaşı Municipality)

The significance of the industrial heritage isn't cognized by the residents, landowners, municipalities, planners, the Natural and Cultural Preservation Board. By transporting the mechanical equipments to other factories, the structures are destroyed by the landowners. The activities to draw public awareness aren't organized by the authorities. The planners are concentrated on the economic potential of the area and made decisions to use the area in full capacity, even it means to ignore the values of the industrial heritage.

1.2. Aim and Scope of the Study

Eskişehir was designed as an industrial city in the Early Republic Period with a significant role in brick and tile production in relation to the adjaceny to the transportation posibilities and its rich clay reserves. In recent history, there are 11 brick and tile factories[6]; most of which were demolished. The city still possess brick and tile factories that has continued to be destroyed due to the dereliction and physical deteriorations. In the planning process, the industrial heritage has not considered and the awareness on the subject was not obtained. Therefore, the brick and tile factories in Eskişehir is chosen for the study. The accepted conservation process of immovable cultural heritage basically starts with documentation, continues with analysis and assessment, at last concludes with development of related principles.

The aim of this thesis is to define the conservation problems of tile and brick factories in Eskişehir; to develop an evaluation in order to decide problems, values and potentials

[6] In 1974, there were 11 tile and brick factories in Eskişehir
Rıza, E.,Şeremetli, E., 2007, *Topraktan Marka Yaratmak : Kılıçoğlu Markasının Yolculuğu 1927-2007,* Eskişehir

through swot analysis and finally to improve conservation principles in urban and building scale.

1.3. Sources and Methodology

The literature survey is started with the theoretical study on the issue of industrialization and industrial heritage. First of all, these terms are identified through the publications of the researchers, international documents and official websites of related organizations. Then, to understand the industrialization period in Turkey, brief history of industrialization in Early Republic is defined through the written documents. (books, articles, thesis and international documents). The conservation of the industrial heritage are discussed by the historical background, approaches to conservation of industrial heritage in urban and building scale. In urban scale, three examples are determined according to their different approaches in interventions, planning process and developers. In complex and building scale; five groups are defined by their intervention type and reuse proposals. In the case studies for regenaration, the examples on the brick and tile factoriesare also represented. For the theoritical study on values covers valuation process in the international document, publications, thesis and websites. The value types starting from Riegl (1902) is discussed. The seven sources are examined.[7] The method of grouping in Ayşem Kılınç's thesis that is the combination of the value systems after listing and bringing together all value types were selected. The values are grouped into three due to their origins as intrinsic values (emerged by the cultural asset's own characteristics), extrinsic values (attributed to the cultural asset by people) and economic values (related to reuse, market, economic possibilities of the asset).

The literature survey on brick and tile factories in Eskişehir consists of the city, brick and tile factories and evaluation. The features, urban characteristics and historical background of the area are obtained by the written and visual documents. For the brick and tile factories; the site survey is done in two phases to collect essential information such as storey height, original use, current use, condition... The first phase is a short site survey to obtain a general idea on the characteristics of the area and to define necessary base maps to be used in the next site surveys. As next phases; two study areas are chosen as the industrial area and

[7] The sources for the conservation values are;
- Riegl, *The Modern Cult of Monuments: Its Character and Its Origin*, 1902
- Feilden and Jokilehto, *Management Guidelines for World Cultural HeritageSites*, 1998,
- Australia Icomos, *Burra Charter*, 1998 Mason, "Assessing Values in Conservation Planning: methodological issues and choices*", Assessing the Values of Cultural Heritage*, 2002,
- Madran & Özgönül, *Kültürel ve Doğal Değerlerin Korunması*, 2005,
- Köksal, İ*stanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri*, 2005
-Kılınç, Ayşem, 2009, *Value Assessment for İndustrial Heritage in Zonguldak,* unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, METU, Ankara

brick and tile factories. Then the physical information about the brick and tile factories are gathered in detail. For the production process of the factories, the site surveys, the written sources and the discussions with the workers who were worked in the factories are significant to define the process on-site.

The inventories to analyse of the brick and tile factories were done. The content consists of general information, inventory data, environmental characteristics, site through the production process, site components, plans (original and drawn after site survey), history of site, significance of the site, bibliography.

The general information covers the address, building lot number, owner, construction date and architect. In inventory data; investigator, survey date and photo number are reported. In the environmental characteristics; the location, nearby environment and access to the site are represented with a google earth image. The site includes production process and site components. The production process is schemed with photographs. The production capacity, source of power and sector served is defined. [8] The site components are open area, buildings and mechanical equipments. The original function, current function, construction date, construction system and material, conditions are described. The condition of the buildings can be good, partially destroyed and totally destroyed and defined as:

Good: The structure is remaining, the plan scheme is still legible.

Partially destroyed: Some part of the structure (roof, walls…) is destroyed. However, the plan scheme is still legible.

Totally destroyed: The structure is destroyed and the plan scheme is not legible.

The buildings are represented by the photographs, plans, sections and elevations. The history of the site includes history, the registration status and transformation of the site within years. The significance of the site consists of the extrinsic, instrinsic and economical values. Finally the bibliography of the inventory is provided. The sources are written, visual, oral sources and site survey. Firstly, the written sources are used for the formation of the inventory.[9] Then; the publications, articles, annuals, periodicals are studied for the history and condition of the factories. The general command of mapping, municipalities, archives of

[8] The terms on production is defined as
"Production capacity: Volume of products that can be generated by a production plant or enterprise in a given period by using current resources.
Source of power: Sources from which energy can be obtained to provide heat, light, and power. Sources of energy have evolved from human and animal power to fossil fuels, uranium, water power, wind and the sun.
Sector served: That part of the total market which a company decides to serve."
Oxford English Dictionary, *http://dictionary.oed.com*, accessed on September 13, 2011

[9] The sources on the inventories;
- Kılınç, Ayşem, 2009, *Value Assessment for İndustrial Heritage in Zonguldak,* unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, METU, Ankara
- Köksal, T. Gül, 2002, İ*stanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri*, unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul
- Palmer, M., Neaverson, P., 1998, Industrial archaeology: principles and practice, Routledge, New York

the transferred factories and architects who designed projects (Kemal Nalbant for the Kılıçoğlu and Kartal Brick and Tile Factories, Hulusi Buyan for the Kurt Tile Factory) are searched for the written and visual sources such as plans, aerial photographs, historic photographs of the factories. The oral sources are the municipalities, architects who designed projects, managers and workers of the factories. On the site survey, the photographs and schematic drawings are the source of the study. So the information on the features and transformation are obtained by these sources. The conservation and planning activities were defined starting from 1956 to 2011 by the master and development plans obtained by the Büyükşehir and Tepebaşı Municipalities. In the end of the chapter an evaluation consists of the area, structures, mechanical equipments and planning activities are obtained.

Then the evaluation of the Brick and Tile Factories according to its values, problems and potentials are made refer to the conservation values defined in Chapter 2 in urban and building scale for all of the brick and tile factories with the conclusion of the swot analysis.

As the final step, the theoretical studies and site survey are reviewed. Furthermore, by analysing other industrial heritage examples and conservation approaches for industrial heritage, the conservation principles are developed according to the national and international documents.[10] With reference to these documents, the principles are grouped into three as physical, sociocultural, administrative, economic and assessed in building and complex scale by considering the studies on previous chapters and including a conclusion specific to the Eskişehir Brick and Tile Factories is presented.

1.4. Structure of the Study

This study is structured in six chapters. The introduction is the first to present the problem definition, aim and scope, methodology and structure of the study.

[10] The sources for the conservation principles;
-Kültür ve Tabiat Varlıklarını Koruma Kanunu, No.2863 (The Turkish Law No.2863 on the Preservation of Cultural and Natural Assets), 1983
-*Draft Joint ICOMOS – TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes,*2003, ICOMOS, Dublin
-Yıpranan Tarihi ve Kültürel Taşınmaz Varlıkların Yenilenerek Korunması ve Yaşarılarak Kullanılması Hakkında Kanun, No.5366, 2005
-*The ICOMOS Charter for the Interpretation and Preservation of Cultural Heritage Sites*, 2008, ICOMOS, Canada
-*Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Enviroment,* 2008, English Heritage, England
-*Conservation Principles for the Sustainable Management of the Historic Environment in Wales, Welsh* Assembly Government, 2009, Wales, England
-*ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value,* 2010, ICOMOS, New Zealand
-Madran, Emre, "*Kültür ve Tabiat Varlıklarını Koruma Mevzuatındaki Son Düzenlemeler",* METU, Ankara

The second chapter covers the industrialization, industrial heritage and conservation of the industrial heritage. Firstly, the term of the industrialization and industrial heritage, which are the origin of the study, is summarized. The brief history of industrialization in national scale are explained starting from 19th century to today indicating the situation of industry in Early Republic Period and locating Eskişehir within this background. In the third part, the conservation of industrial heritage with historical background and approaches in urban and building scale with examples from the world are discussed including the brick and tile factory transformations. Then, for the formation of the assessment for the brick and tile factories a theoretical framework for the values are defined.

The third chapter covers a research in order to reveal the historical, geographical, economical, social and cultural context of the brick and tile industry in Eskişehir. The general features of the city, urban characteristics and historical background with the emphasis on industry district are discussed. The production process of the brick and tile factories are defined. The current state of the area is described with the help of the data collected from selected study area during field surveys and the documents analysed during these surveys. The inventories for the factories are obtained by the surveys of the structures and complexes. The transformation, planning and conservation activities in the area are discussed. Herewith, the evaluation of the chapter is obtained as the result of these analysis.

The fourth chapter is assessment of brick and tile factories where an evaluation method for brick and tile factories are formed in urban and building scale. The value types discussed in the second chapter are re-evaluated for values, problems and potantials.

The fifth chapter is an evaluation of previous three chapters that covers a conclusion on discussion of the conservation principles for the Brick and Tile Factories in Eskişehir.

CHAPTER 2

INDUSTRILIZATION, INDUSTRIAL HERITAGE AND CONSERVATION OF INDUSTRIAL HERITAGE

The transformation from agrarian society to industrial society occurred in the late 18th century.The alterations changed the industry, economy, society and architecture as well. The conversion in production process; indicated itself in the building type, construction technique and used materials. The industrial heritage should be discussed initially, which forms the background of the developments.

2.1. Industrialization and Industrial Heritage

Industrial Revolution is a development in industry; that began in England in the late eighteenth and early nineteenth centuries, based on the invention of new machinery and large-scale production methods.[11] The transformations occurred in agriculture, textile and metal manufacture, transportation, economic policies and social structure, that cause increase in the population and spatial growth of cities.[12]

According to the Nizhny Tagil Charter (2003), the industrial structures and complexes include "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."[13]

The discussions of industrial heritage was introduced in 1950's. The term "industrial archaeology" was used for the first time by Michael Rix in 1955. "Industrial Archaeology is a term which involves the tangible and intangible remains, documents of industrial culture, the structures constructed by industrial techniques, its landscape and settlements."[14] The international organizations ICOMOS and UNESCO started to consider industrial heritage and published international documents. In document of ICOMOS; the technical, cultural and social value of the industrial heritage is considered as an important part of collective memory

[11] Sengel, Deniz, "Sanayi Devrimi" *http://web.iyte.edu.tr/~denizsengel,* accessed on December 15, 2010
[12] Hatt, P. K., Reiss, A. J., 1951, *Cities and Society ,*The Free Press, Glencoe, Illinois (The Industrial City: Center of Cultural Change, by Ralph E. Turner)
[13] TICCIH, 2003, The Nizhny Tagil Charter for the Industrial Heritage, Moscow. This charter is prepared by The International Committee for the Conservation of the Industrial Heritage, TICCIH which is the world organization representing industrial heritage and is special advisor to ICOMOS on the subject.and was established in 1974 for preservation of industrial heritage and artefacts and understanding historical, scientific and educational value of mankind's industrial heritage,
TICCIH Official Website, *www.ticcih.org*, accessed on January 12, 2011
[14] Köksal, Gül, 2008, "Osmanlı Sanayi Hamlesi" *http://www.mimarizm.com/* accessed on December 12, 2010

and some of them deserve to be protected as a part of industrial heritage.[15] TICCIH is another organization that collaborated with ICOMOS. TICCIH was established in 1974 for preservation of industrial heritage and artefacts and understanding historical, scientific and educational value of mankind's industrial heritage. Other national and international organizations are ERIH, ICOHTEC, SHOT, NEKTAR, E-FAITH.

In the first era of Industrial Revolution, the industrial structures and complexes were located in the city center; owing to the connection to transportation, infrastructure system and consumer.[16] In time, the industrial structures and complexes ended their production function and were moved out of city center; because of expansion in production area, social and political that applied for industrial areas, located in city center,"the remediation of environmental contamination."[17] So; the remaining structures and complexes in the city center are abandoned (Beykoz Leather Factory), demolished (Maltepe Gasometer Complex) or due to high commercial value of these industrial lots, they are regenarated. (Silahtarağa Electric Power Station to "santralistanbul", Cibali Tobacco Factory to Kadir Has University; "Lengerhane" [18] in Hasköy to Rahmi M. Koç Industrial Museum, Terkos Pumping Station to Water Civilization Museum).

Figure 3: Beykoz Leather Factory (*www.arkitera.com,* accessed on November 01, 2010)

> "By reasons of, unefficient management, inadequate technology, air pollution; the historic factories are closed or lost their function is an encountered situation all around the world."[19]

In Turkey, there are industrial structures and complexes which are face to the destruction.

[15] Madran, E., Özgönül, N., 1999, *International Documents Regarding the Preservation of Cultural and Natural Heritage,* METU Faculty of Architecture Press, Ankara
[16] Tekeli, İlhan, 2009*, Sanayi Toplumu için Sanayi Yazıları,* Tarih Vakfı Yurt Yayınları, İstanbul
[17] Morin, Bode, 2009, "US Heritage Conflicts with Environmental Mediation", *www.ticcih.org,* accessed on November 12, 2010)
[18] "Lengerhane" is an instution where the marine production of chain and anchor is provided for the Ottoman Navy.
[19] Föhl, A., (1995), *Bauten der Industrie und Technik,* Schriftenreihe des Deutschen Nationalkomitees für Denkmalschutz, 47, Bonn

Some of them were demolished such as Maltepe Hava Gas Factory in Ankara. Maltepe Gas Factory (1929) was one of the first industrial heritage examples of the Early Republic Period with its gasometers, water tower, power station, silos, ateliers and storehouses. With the introduction of natural gas, the production function of the complex was ended. The destruction of the complex was introduced by EGO General Directorate in 1990, however it had been registered by Cultural and Natural Conservation Board. In 1996, the cancellation of registry was offered by EGO General Directorate, but this offer was refused. Unfortunately, Maltepe Havagazı Fabrikası, which was accepted as an industrial and cultural heritage example in national and international documents, was totally destroyed in 26 May 2006.[20]

Figure 4: Maltepe Hava Gazı Fabrikası (Maltepe Gasometer Complex) before destruction (*www.mimarlarodası.org,* accessed on November 01, 2010)

2.2. Industrilization in Early Republic Period

In Ottomans, the handicraft and small scale industry was in high standards in 15th and 16th century. In Europe, the industry was started to be mechanized in the mid of 17th century. However in the Ottoman Period, first modern establisments were constructed with the Tanzimat Reform in 1839 (The Feshane Textile Factory, Hereke Factory, Bakırköy Factory). For the requirements of army, the Haliç Dockyard was established.[21]

In the Early Republic Period, the congress and laws were established to obtain the economical and industrial improvement. Tesvik-i Sanayi Kanunu (the Law for Encouragement of Industry), İzmir İktisat Kongresi (İzmir Economic Congress) and five-year

[20] TMMOB," Maltepe Havagazı Fabrikası" *http://www.mimarlarodasiankara.org/* accessed on December 15,2010
[21] Akakıncı, M., Malkoç, S., Velidedeoğlu, T., 1973, *50 yılda Türk Sanayi,* Sanayi ve Teknoloji Bakanlığı, Ankara

industrialization plans were the stages.

İzmir İktisat Kongresi (İzmir Economic Congress) was organized between February 17 and March 4 of 1923 to plan the economical program of the new governmental and private enterprises. Other articles included in the congress are;

- The encouragement of industry
- Supporting private entrepreneurs
- The foundation of national banks
- The program for construction of railway

In 1927, Tesvik-i Sanayi Kanunu (the Law for Encouragement of Industry) was adopted to encourage the private investors to participate in industry sector. The aim was to accelerate foundation of the factories. Due to the Great Depression in the end of 1920's, private sector went to bankrupt; so the plans changed and the financial support of the government became an obligation in 1930s.[22]

The main principles of the First Five-Year Industrialization Plan was prepared in 1933 and accepted on April 17, 1934. With this plan, organized industrialization started countrywide and the state entered the economic life as an administrator. The statism was aimed as an economic improvement. The principles are;

> -The industries based on agricultural products and natural resources will be selected in the first place. The exception is that the industries that will provide high benefit to the society. The prior production types are textile, mining, paper, chemistry, glass and cement.
>
> -The state or national institutions will provide large capital and technical power for foundation of factories.
>
> -The production capacity of industries will be proportional to the needs and consumption of the country.[23]

Preparation of the Second Five-Year Industrialization Plan started in 1936. The second plan was much more comprehensive than the previous one. The industrial branches of the plan were listed as; mining, local fuel industry and commerce, earth industry, food industry, chemistry industry, mechanic industry to be financed local resources.

Ereğli, Karabük, İskenderun, Kayseri, Zonguldak, and Eskişehir were the first cities chosen for the industrilization according to specific production type that were oriented by the raw

[22] Coskun, Ali, 2003, "Cumhuriyet'in ilk yıllarında Türkiye ekonomisi", *Atatürkçü Düsünce Dergisi, Sayı: 4, http://www.alicoskun.net/Publications/ADD-2003-4-72.pdf* , p.72, accessed on December 2, 1010
[23] İnan, Afet, 1972, *Türkiye Cumhuriyeti'nin ikinci sanayi planı*, Türk Tarih Kurumu, Ankara

material. Zonguldak was specialized in coal, Kayseri in textile, Ereğli in iron and steel, Paşabahçe in glass, Kütahya in ceramic, Eskişehir in brick and tile.

Between 1940- 1950; because of the war economy, protectionist economical policies were left. Between 1950 and 1960's, a new industrial approach was followed which gave priority to production of imported goods. The industry was progressed by improvement of transportation, the investments of the state and private institutions, the increased population, which affected immigration of labour force from rural to the urban settlements. In 1950, the foundation of Industrial Development Bank, which was significant for the support of the private investors, constituted. During the 1960's and 1970's, the industry depended strongly on government support and it remained introvarded. After 1963, the development plans obtained the enlargement of the industry. The industrial policy until 1980 based on an import-substitution strategy. After 1983, the prime minister Turgut Ozal, shifted the inward view to a outward looking approach, thereby changed the strategy of the Turkish economy. Ozal's policies include liberalizing foreign trade and privatizing[24] state run industries, devaluing the currency, removing price controls and reducing the budget deficit by eliminating government expansion in state run businesses. According to Stuart Gold "Turkey's export-led industrialization has, as intended, further integrated the country into the international capitalist economy by the loss of its economic sovereignty and domestic harmony."

Owing to the economic crisis after 1990's, the government stopped industrial investments and started to sell many national factories. The crisis affected the private sector and caused decline in the investments.

Along with the formation into a republic, one of Turkey's goals was Industrialization. However in time, owing to the wrong policies in economy and industry, Turkey still can not be categorized as a developed industrialized country.

2.3. Conservation of Industrial Heritage

2.3.1. Historical Background

After industrial revolution, the cities became urbanized. With this progress; the urban spaces converted and the population increased. So the physical character, socio-economy, culture, the historical texture of the cities were weakened that caused the damage of the urban

[24] Privatization has emerged as a key element of the Turkish neoliberal experiment in the 1980's designed to accomplish successful integration into the world economy. The privatization strategy focused on increasing efficiency, reducing the burden of the state economic enterprises on the government budget and widening property ownership. The Turkish privatization program was established Turgut Özal who was the Prime Minister of Turkey (1983-1989) and the President (1989-1993)
Gold, Stuart, The Costs of Privization Turkey in the 1980's, 1989, *http://www.multinationalmonitor.org/hyper/issues/1989/gold.html*

identity.[25] The cities, that lose or change their authentic architectural or urban features, fall into confusion of identity.

After the World War II, the urban regeneration projects started to rehabilitate the cities especially the store, industrial, dock areas in Europe and America.[26] Since 1950, the industrial structures and complexes ended their production function and were moved out of city center; because of the expansion in production area, social and political causes. Then many cities in England ceased their industrial production and the industrial structures and complexes became derelict. So the new uses were offered for these areas. For instance, in the England's South Wales, the coal mines were transformed into the museums.[27]

The world became one space in cultural, economical and political senses with globalization[28], which has started in the end of the 20th century. The cities become equal and the urban identity is weakened. With regard to the globalisation, it is M. Duffield's view that certain areas do have access to the economic meaning of globalisation, while other areas do not. So the cities should be marketed in order to gain different features.[29] The new consumption areas are formed instead of the existent ones; for instance shopping malls, sport centres, convention centres… are constructed

The awareness for conservation of industrial heritage arose in the mid-20th century.[30] The term "industrial archaeology" was used for the first time by Michael Rix in 1955 as defined in the first part of the chapter.[31] The common discussion about the definition of industrial archaeology is that the historical period starts with the Industrial Revolution in the late 18th century or with the prehistoric times. In the UNESCO World Heritage List, the time restriction is not considered in industrial archaeology.[32] Gülsün Tanyeli also states that industrial archaeology covers an area which includes production, equipment and architecture of the

[25] The identity is all of the characteristics that define the object. According to Kevin Lynch (1981); the urban identity is defined as "the extent to which a person can recognize or recall a place as being distinct from other places". The urban identity is not only constituted by the environmental factors but also society, economy, industry, local authorities and political decisions, traditions, the meanings that the people give.. The architecture of a city which is characterized by construction materials, the social and economical character, local authorities, designer's role and user's need of that period. is an essential for the urban identity.
Goncu, Neslihan, 2007, *Kent Öğelerinin Kent Kimliği Üzerindeki Etkileri,* unpublished master's thesis submitted to Graduate School of Industrial Design Program, Marmara University, İstanbul

[26] Özden, Pelin, 2008, Kentsel Yenileme, İmge Kitabevi Yayınları, Ankara

[27] Urry, J., 1999, Mekânları Tüketmek, Ayrıntı Yayınları, İstanbul

[28] The globalization, which has started in the end of the 20th century, is the formation of the world with the economical, political, social, cultural and ecological processes. With the globalization; increase the speed of technology and information, time and space become more intense.
Thorns, David, 2004, *Kentlerin Dönüşümü- Kent Teorisi ve Kentsel Yaşam,* Soyak Yayınları, İstanbul

[29] Postalcı, İ., Ada, A., Eren, İ., 2006, "The New Urban Memory", ISOCARP Congress 2006: Cities Between Integration and Disintegration, *http://www.isocarp.net/Data/case_studies/835.pdf*, accessed on May 20, 2011

[30] Madran, E. and Kılınç, A., ed., 2008, Korumada Yeni Tanımlar Yeni Kavramlar Endüstri Mirası, 2008, TMMOB Mimarlar Odası Genel Merkezi, Ankara

[31] Köksal, Gül, 2008, "Osmanlı Sanayi Hamlesi" *http://www.mimarizm.com/* accessed on December 12, 2010

[32] Köksal, T. Gül, 2002, *İstanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri,* unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul

pre-industrial period.[33] In the Nizhny Tagil Charter, it is accepted that the historical period extends from the beginning of the Industrial Revolution to the present day together with emphasize on the examination of its earlier pre-industrial and proto-industrial roots.

The first international congress on industrial archaeology and conservation of industrial monuments was made in Ironbridge, Britain in 1973 and participants developed an evaluation of the cultural and historic value of the industrial past.[34] In time, studies of academicians increased and non-governmental organizations as well as small scale volunteer groups established who are working on the subject.[35] The International Committee for the Conservation of the Industrial Heritage (TICCIH) was founded right after Ironbridge meeting. The international organizations ICOMOS and UNESCO started to consider industrial heritage and published international documents. In document of ICOMOS; the technical, cultural and social values of the industrial heritage are considered as an important part of collective memory and some of them deserve to be protected as a part. TICCIH was established in 1974 for preservation of industrial heritage and artefacts and understanding historical, scientific and educational value of mankind's industrial heritage. After 1970, the term was spreaded in Eastern European Countries. With 1983, the industrial structures were recorded as heritage in France. In 1986, the international industrial data collection centre was established in Holland. The organizations regulating the investigations were constituted in Scandinavian Countries.[36]

According to The Nizhny Tagil Charter for the Industrial Heritage(2003), the definition of industrial heritage is done.[37] The industrial heritage is specified as buildings and object as well as production facilities and social services.

One of the basic issue that is declared in the Nara Document (1994) is the conservation of the industrial heritage; such as structures, sites, areas and landscapes with respect to the basic criterias of authenticity.[38] In the document this is defined as "Conservation maintains the authenticity and integrity of a place and involves the least possible loss of fabric or evidence of cultural heritage value. Respect for all forms of knowledge and existing

[33] Tanyeli, Gülsün, 2000, "Endüstri arkeolojisi yapılarının korunması ve yeniden islevlendirilmesi", *Domus* m, Aralık 2000, p.50

[34] Trinder, Barrie, ed., 1992, *The Blackwell Encyclopedia of Industrial Archaeology*, Blackwell Publishers, Oxford, pp.172-173

[35] The International Committee for the Conservation of the Industrial Heritage (TICCIH), European Route of Industrial Heritage (ERIH), European Federation of Associations of Industrial and Technical Heritage (E-FAITH), International Committee for the History of Technology (ICOHTEC), The Association for Industrial Archaeology (AIA) etc. are some of the national and international NGOs that are working on different aspects of industrial heritage representing industrial heritage and is special advisor to ICOMOS on the subject. *(www.ticcih.org),* accessed on November 12, 2010)

[36] Şimsek, Eylem, 2006, *Endüstri yapılarının kültürel miras olarak degerlendirilmesi: İzmir Liman arkası bölgesi örnegi, unpublished* MS thesis submitted to the Graduate School of Natural and Applied Sciences of Dokuz Eylül Üniversitesi, İzmir

[37] TICCIH, 2003, The Nizhny Tagil Charter for the Industrial Heritage, Moscow. This charter is prepared by The International Committee for the Conservation of the Industrial Heritage

[38] *The Nara Document on Authenticity,* 1994, ICOMOS

evidence, of both tangible and intangible values, is essential to the authenticity and integrity[39] of the place." It is decisive to explore the significance of a site in its social, cultural, historical and natural contexts and settings. Gül Köksal stated that; " The authentic characteristics, values and texture should be conserved and presented in situ."

Within tangible and intangible values what to preserve and how to preserve it are essential issues to discuss. After the Venice Charter (1964); the charters, recommendations and resolutions were originated in the form of conservation guidelinesby international organizations such as UNESCO and ICOMOS. As noted in the Charter of Venice "It is essential that the principles guiding the preservation and restoration of ancient buildings should be agreed and be laid down on an international basis, with each country being responsible for applying the plan within the framework of its own culture and traditions." In the Conservation Principle, policies and guidance (for the sustainable management of the historic environment) "the term 'place' goes beyond physical form, to involve all the characteristics that can contribute to a 'sense of place'." The interpretation and presentation of the historic sites are another matter that were introduced in recent years with the management of the cultural heritage sites. In the ICOMOS Charter; the Interpretation is defines as "Interpretation refers to the full range of potential activities intended to heighten public awareness and enhance understanding of cultural heritage site."[40]

With purpose of to define the conservation principles, three of ICOMOS Charters are emphasized. These are "the GRANADA Convention for the Protection of Architectural Heritage (1985), the International and Presentation of Cultural Heritage Sites (1998) and ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value (2011)."

The Granada Convention is aimed to define the properties to protect and how to protect them by conservation policies. The titles, that determined are the identification, financial sources, conservation policies, participation, information and training, recording.

The purpose of the ICOMOS Charter (The International and Presentation of Cultural Heritage Sites) is to define the principles of Interpretation and Presentation on conservation developments and with the aim of providing public understanding of cultural heritage sites. With intent to this; seven principles were originated.

[39] Integrity means the wholeness or intactness of a place, including its meaning and sense of place, and all the tangible and intangible attributes and elements necessary to express its cultural heritage value.
ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value, 2010, ICOMOS, New Zealand
[40] *The ICOMOS Charter for the Interpretation and Preservation of Cultural Heritage Sites*, 2008, ICOMOS, Canada

First of all, the public awareness and the access for the understanding of the conservation sites should be provided. The values and significance of the site are comprehensible to its audiences and establish a meaningful physical, scholar and social connection between them. As declared in the charter " The interpretation can include print and electronic publications, public lectures, on-site and directly related off-site installations, educational programs, community activities and ongoing research, training, and evaluation of the interpretation process itself." Second principle is to document significance of the site and its surroundings, through scientific and scholarly methods as well as from cultural traditions. The documentatiation and archives on the information sources should be accessible to the public and be based on a multidisciplinary study of the site and its surroundings. Thirdly, the significance of the site should be evaluated within its context and setting relate to its historical, social, cultural, political aspects. All groups that are lived in and all periods contributed to the site should be considered. The intangible elements are defined as " a site's heritage such as cultural and spiritual traditions, stories, music, dance, theater, literature, visual arts, local customs and culinary heritage should be regarded in its interpretation." The sequential principle is the essentialness of the authenticity in the spirit of the Nara Document (1994). The conservation of the authenticity is relevant to human communities and material remains. So the planning should protect the significance and physical surroundings without impacting its cultural values and changing its texture irreversibly. Fifth principle is the importance of the social, financial and environment sustainability. The public understanding can strengthen the sustainability with the long-term maintenance and regular reviews. Next to the last by facilitating the involvement of landowners and public, the inclusiveness is ensured in the development and implementation of interpretive programs. The planning should be open to the public and an specialized multidisciplinary collaboration between community members, governmental authorities, conservation experts, site managers, scholars... should be ensured. Lastly; continuing research, training, and evaluation are essential components of the interpretation of a cultural heritage site. The programme and infrastructure should be designed in a way that facilitates consistent supervision.

Following the Venice Charter and also the Burra Charter; ICOMOS New Zealand Charter also sets out principles to guide the conservation of places of cultural heritage in 1993 and revised in 2010. The charter emphasizes the distinctive values in New Zealand and forms principles for these values that leads a general conservation guidelines. The purpose of the conservation is defined as "to retain and reveal such values and to support the ongoing meanings and functions of places of cultural heritage value, in the interests of present and future generations." The definition of the cultural heritage value through the connected people, systematic documentary, research and recording is essential to understand the place by means of tangible and intangible values. The planning for conservation is indicated and that should respect to the authenticity and integrity. The setting of a place which is

connected to the cultural heritage value should be conserved and the interventions should be minimum. The public participation is another issue to be regarded continuing throughout the conservation process. In the charter, the conservation process and practice within the degrees of intervention are discussed.

Three of the charters focused on conservation principles within the tangible and intangible values. The notions which are based on Venice Charter are defined within different titles. The interpretation of the sites respecting to cultural heritage values along with its setting and content is discussed. So the terms that are figured in the charters are similar to each other however grouped in different ways and that can be seen in the table 1. The combination of these terms can be categorized as physical, sociocultural and administrative/ economic.

However in Turkey, the subject has been introduced in the recent years. The Turkish Law No.2863 on the Preservation of Cultural and Natural Assets was issued in 1983 is the significant regulation in the conservation of the cultural and natural heritage legally. The changes made in 2004 and 5226 has shaped the final version. In the article 3; the natural heritage, archeological site, conservation area were defined. However, the term of the industrial heritage was not involved. In the Turkey's present legislation, the provisions on the industrial heritage has not been regulated.

In the law, the authority for the conservation was given to the Ministry of Culture and Tourism. The public interest is another significant issue involved in the legislation. The Turkish Law No.2863, Article 14 declared that "Assignment of the rights utilization of the fixed cultural and natural assets that should be protected to government offices, public organizations and institutions and national societies beneficial for the public welfare for certain periods to be used in public services or leasing of the same to real and corporate persons is subject to the permission of the Ministry of Culture and Tourism."

Table 1: The Grouping of the Conservation Principles according to the International Documents

2.3.2. Approaches to Conservation of the Industrial Heritage

Today, the evaluation of the brownfield[41] area gained importance due to be in the city centre and have the infrastructure.The aim of the reuse project could be to conserve and rehabilitate the historical texture of the area. Another aim is to revive the areas physically to improve the economy and the quality of life. In some cities, the projects are applied to bring a new urban identity by the local authorities. However, the local authorities apply disconnected projects to realize in a short period, that cause social, spatial and economical problems. These projects should be developed according to the authentic and historical characteristics of the cities; because each city has their own identity. The identity of the areas must be determined and the approaches should be defined according to it.[42]

The subject of the thesis involves the urban scale and complex/ building scale; therefore the examples on both scales are examined. The urban scale projects were located in an extensive area and chosen according to be specific examples for representing the different approaches with respect to the conservation interventions, character of the projects, landownership status and developer. The building scale projects were selected according to possess different conservation interventions and new functions.

2.3.2.1. In Urban Scale

In the urban scale according to the examined projects, different approaches are seen. The first approach is to apply different principles in the area. For instance demolishing some parts of the area to re-function for economic reasons and conserving other parts of the area. Second approach is to intervene the area as a whole in every scale and conserving the industrial structures and their components. Another approach is initiated by the public and that caused to constitute the management policies of the area; so for the structures, different interventions are applied. In every example various landowners such as private, state, corporations are seen.

a. London Dockland, England

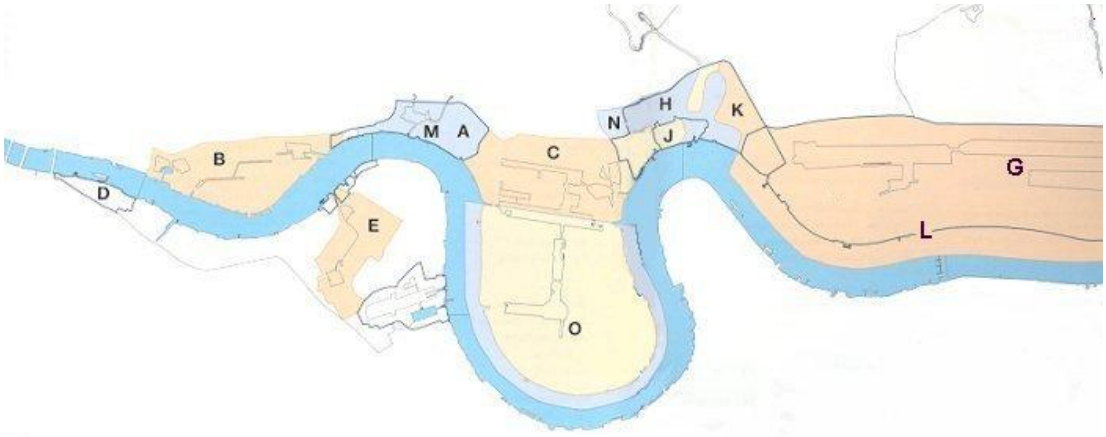
In the Early 19th century; the construction, maintenance and repair of the ships were made in the docks located in the Thames Riverfront which have 2.226 ha. From 1909, the Port of London Authority were responsible for the management of the area. During the Second World War, the dock was damaged by the attacks. In the 1950s, the rebuilding activities

[41] Brownfield: “abandoned or underused industrial facilities available for re-use. Expansion or redevelopment of such a facility may be complicated by real or perceived environmental contaminations”
(Oxford English Dictionary, *http://dictionary.oed.com/,* accessed on April 19, 2011)
[42] Özden, Pelin, 2008, *Kentsel Yenileme*, İmge Kitabevi Yayınları, Ankara

were started. Between 1960- 1970, the shipping industry changed and the invention of the new container system of cargo transportation was intoduced; that cause the lack of accommodation for the much larger vessels needed by containerization. By these reasons the ports were moved to deep water ports such as Tilbury and Felixstowe. Until 1980, all of the London's docks ceased production, leaving derelict land and causing social problems such as unemployment.

The efforts to redevelop the docks began as soon as they were closed. The situation was complicated by due to the large number of landowners such as the Greater London Council (GLC), the British Gas Corporation, five borough councils, British Rail and the Central Electricity Generating Board. With intent to solve this problem, the Secretary of State for the Environment formed the London Docklands Development Corporation (LDDC) to redevelop the area in 1981. [43] From the beginning, the LDDC has worked with the Southwark Council[44], private owners and developers to find viable new roles for the area.
The decisions to encourage the investments were taken. Since 1987, the LDDC had made the planning by not considering the public opinion, so the works weren't decided as appropriate. After that the LDDC improved policies with the aim of the public interest. As mentioned in Granada Convention Article 15 ; "Each Party undertakes to develop public awareness of the value of conserving the architectural heritage, both as an element of cultural identity and as a source of inspiration and creativity for present and future generations… " [45]

[43] Lddc London Docklands Development Corporation is managed by a board consisted of 13 people that are nominated by the Ministry of Environment
The Corporation was an urban development corporation, the second to be established by the then Secretary of State for the Environment, Michael Heseltine, under s.136 of the Local Government, Planning and Land Act 1980.
(The London Docklands Development Corporation 1981 -1998, *http://www.lddc-history. org.uk /planning /planmon2. html,* England, accessed on September 30, 2011)
[44] Southwark Council is made up of 21 wards in London, each electing three councillors making a total of 63.
(Southwark Council, *http://www.southwark.gov.uk/info/,* accessed on September 30, 2011)
[45] Council of Europe, 1985, Convention for the Protection of Architectural Heritage of Europe, Granada



Ref	Area	Year	Origin
A	Limehouse Area	1982	LDDC
B	Future for Wapping	1982	LDDC
C	Isle of Dogs Design Guide	1982	LDDC
D	Hay's Wharf (London Bridge City)	1983	LDDC
E	The Southwark Site	1983	LDDC
F	Greenland Dock	1984	Conran Roche Architects
G	The Royal Docks	1985	LDDC
H	The Leamouth Area	1985	LDDC
I	Island Yard Area	1987	LDDC
J	Brunswick Wharf	1987	Richard Rogers Ptnrs
K	Thames Wharf/Limmo and East India Dock Basin	1988	MacCormac, Jamieson Pritchard & Wright
L	The Royal Docks	1992	LDDC
M	Limehouse	1994	LDDC
N	Leamouth	1994	LDDC
O	Isle of Dogs	1994	LDDC

Figure 5: The Functions in London Docklands (http://www.lddc-history.org.uk/planning /planmon2 .html, accessed on December 2011)

LDDC decided to divide the area and put design principles for 8 areas with different functions and interventions. However the projects were not considered as integrated and the interventions were differentiated in every area. With regard to the regional planning; first approach was applied in the Isle of Dogs by demolishing and constructing as an enterprise zone between 1982- 1992. The character of the area has changed from the low height factory and warehouses to skyscrapers and business centers.

Figure 6: The transformation of the Canary Wharf, Isle of Dogs a) The Aerial View of the area in 1967 (*http://www.lddc-history.org.uk/planning /planmon2 .html,* accessed on December 2011) b) The Aerial View of the area in 1997 (*http://www.lddc-history.org.uk/planning /planmon2 .html,* accessed on December 2011)

Another approach applied in the areas is to conserve historic structures such as conversion of the warehouses and refunction for new businesses which is seen in Bermondsey Riverside. In the London Bridge City as a part of Bermondsey Riverside many conservation and transformation (1980- 1987) examples are seen such as the Cottons Centre, the St 0laf House and Hay's Galleria.

Figure 7: The transformation of the Bermodsey Riverside **a)** The View of the Cotton's Centre (*http://www.lddc-history.org.uk/planning /planmon2 .html,* accessed on December 2011) **b)** The View of St Olaf House *http://www.lddc-history.org.uk/planning /planmon2 .html,* accessed on December 2011) **c)** The View of Hay's Gallery (*http://www.lddc-history.org.uk/planning /planmon2 .html,* accessed on December 2011)

The transformation into the park areas can be seen. In the Royal Docks, many projects were applied, such as, The London City Airport, exhibition centre, University Campus, Thames Borrier Park in a short period of time so an unintegrated plan scheme was formed. The park was designed for connecting the neighbourhoods by walkways, squares and creating green landscape with vegetation. [46]

[46] The London Docklands Development Corporation 1981 -1998, *http://www.lddc-history.org.uk/planning /planmon2 .html,* England, accessed on September 30, 2011

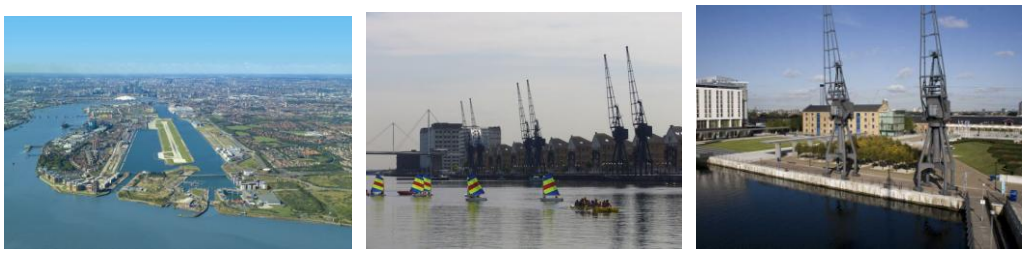


Figure 8: Royal Docks, today (*http://www.lddc-history.org.uk/planning /planmon2 .html,* accessed on December 2011)

The positive aspects of the project are provision of the incentive and support for the private investments. However, an integrated planning was not established. In the beginning, the public participation was not involved. In the progress, the attention to the subject was provided.

b. IBA Emscher Park, Ruhr Valley, Germany

The Ruhr Valley is located in the West of Germany and the area is between the rivers Ruhr (in the South) and Lippe (in the North). The Emscher Area has about 2.5 million in habitants with 45.754 ha land area, covers 17 cities.[47]

Figure 9: The Location of the Emscher Park (*http://en.landschaftspark.de/*, accessed on October 05, 2011)

The industrialization started with the armament production before and during the World War I and II. Until the early 1970's; the increased level in production, employment and transportation caused the Ruhr area, significantly the Emscher District to become one of Europe's largest coal-mining and steel-manufacturing centre. The decline of the industries resulted in an economic and physical problems as well as social change and a loss of cultural significance in the region. Therefore, the rail beds, smokestacks, slag heaps,

polluted soils, industrial ruins and reengineered waterways were abandoned.

In 1989 due to cause the environmental contamination, the reuse of the site was suggested by the IBA [48], public, conservation board and trade associations. The IBA established new teams under organization as “Ruhrgebietstourismus GmbH” and “Kultur Ruhr GmbH” with the aim of revitalization of tourism to present the historical and technological process of the industrial heritage, recreational and cultural centres. The projects were developed to increase the cultural and financial gain. Today, the all project series is in its final phase and will be completed in 2014.[49]

Figure 10: The projects in the area(*http://en.landschaftspark.de/*, accessed on October 05, 2011)

The project is designed according to the characteristics of the industrial structures to provide the historical, technical and architectural continuity. The primary objective of the IBA was to plan the urban and building scale industrial areas as a whole and connect these areas by the

[47] Schreckenbach, C., Teschned, C, 2008, “IBA Emscher Park- a beacon approach dealing with shrinking cities in Germany”, *Kent State University*, Dresden

[48] The IBA (Internationale Bauausstellung) was established between 1979-1987 in Germany and carried out the operations to recover the damage of Berlin after World War II. The government created a state owned private agency (IBA Ltd.) that was established in the city of Gelsenkirchen in the centre of the Emscher Region.
IBA encouraged the ecological, economic, and urban revitalization of the Ruhr Valley and the Emscher River through several collaborative partnerships with various agencies and 17 local authorities of the Ruhr district.
(Ganser, K., 1992, Strukturwandel, Geschichtlichkeit und Perspektiven des Ruhrgebietes, Deutsche Kunst und Denkmalpflege, 2, year: 50, Rosenheim, Almanya, p. 119-128)

[49] The project consists of “120 projects; 1 national, 2 regional garden exhibitions, planning for green space, landscape parks reshape of 350 km open sewage channels, 17 new technology centres housing development projects with 2500 new, 3000 existing flats and are provided by public and private investments. Some of the projects are Zeche Zollverein XII Coal Mine Industrial Complex, Duisburg Nord Landschaftspark, Bochum Jahrhunderthalle, Oberhausen Gasometer, The Mülheim Aquarius Water Museum”

Emscher landscape park. As defined in the TICCIH Principles ; "Protection measures should apply to buildings and their contents since completeness or functional integrity is especially important to the significance of industrial heritage structures and sites. Their heritage value may be greatly jeopardized or reduced if machinery or other significant components are removed, or if subsidiary elements which form part of a whole site are destroyed."[50]

One of the fields of works are the organization of national and international project competitions.[51] The conservation fund is provided by Nordrhein-Westfalen Region, German State and European Community. IBA protected the public interest by active participation, planning 500 ha of area into public use and organization of the specific programs for the children and teenagers.The collaboration with the curators and future users was provided in the Coal Washing Plant.

In conservation and reuse projects, minimum intervention to solve the structural problems and reuse of the structures were adopted. The main aim is to conserve the authentic architectural characters and elements of the structures. It is declared in the New Zealand Charter 2010 ; "Intervention should be the minimum necessary to ensure the retention of tangible and intangible values and the continuation of uses integral to those values. The removal of fabric or the alteration of features and spaces that have cultural heritage value should be avoided."[52] Some elements to provide physical convenience of the structures are integrated; such as air conditioning, acoustic conditioning, heat control and management, fire protection system.[53] The facade and the machines were restored and the buildings were equipped with modern technology and facilities.

One of the significant area in the Emscher Park that indicates the approach of the project such as minimum intervention and design area as a whole is Zeche Zollverein XII Coal Mine Industrial Complex in Essen, Germany.[54] The cultural industrial landscape of the Zollverein Mine is a combination of components of industrial requirements of mine. These are; the Zollverein underground mine, the pits, the Zollverein central coking plant, the railways, the pit heaps, mining damage, changes of the gravitational flow into receiving waters, the miner's

[50] TICCIH, 2011, Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes, Dublin

[51] Ganser, K., 1991, Projektübersicht, IBA Emscher Park, Stadtbauwelt 24, Germany, p. 1218-1219

[52] *ICOMOS, 2010, New Zealand Charter For The Conservation of Places of Cultural Heritage Value*, New Zealand

[53] Köksal, T. Gül, 2002, *İstanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri,* unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul

[54] The Zollverein mining field covered an area of 13.2 km². Zollverein XII Coal Mine Industrial Complex (German Zeche Zollverein) was established by Fritz Schupp and Martin Kremmer between 1928-1932. Within this period, the landscape developed from an agrarian, sparsely populated area into an extremely condensed industrial settlement area.Form and function, buildings and machines integrated to eachother. The structures were planned on two axes symmetrically. On the South-North axis service and on the East-West axis the production buildings were established. . In 1986, the Zollverein Mine was closed down. In 1986, Zollverein was put under an official protection order by a ministerial decree from Düsseldorf and listed as a monument in the city of Essen. The structural changes at Zollverein were accepted when the site was inscribed into the UNESCO World Cultural Heritage list on the 14th December, 2001.
Unesco, 2001, *WHC Nomination Documentation,* The Europe and North America

housing and housing estate development, the mine consumer facilities and welfare centre. The master plan put forward by Rem Koolhaas in 2001- 2002 that consists of a band around the former historic site, containing the necessary new programs and functions.

The Blower House in Duisburg was converted into a theatre hall in 2002. The preservation of the originality of the halls and the machinery were provided. The technology, cables and electric circuits were visibly installed in the hall or on the walls and integrated into the machinery and the already existing conduits.[55]

Figure 11: The Blower House (*http://en.landschaftspark.de/,* accessed on October 05, 2011)

The open areas and the mechanical equipments are also considered as a part of industrial area. In the Zollverein Park, every elements are conserved and used for the landscape design. The former rail tracks will be maintained as public space and connect the main buildings. The sky bridges, which transported coal from one part of the site to another, will be used for visitors. The prominent buildings and plants are enclosed within a single footpath which runs all the way round the complex for walking, jogging or inline skating. [56]

[55] Duisburg Nord Landschaftspark, *http://en.landschaftspark.de/*, accessed on October 05, 2011
[56] OMA Architects, *http://oma.eu/projects/2006/zollverein ,* accessed on October 05, 2011

Figure 12: The Zollverein Park (*http://oma.eu/projects/2006/zollverein ,* accessed on October 05, 2011)

In The Aquarius Water Museum (1892) in Mülheim was transformed into water museum in 1992 on the purpose of informing the public about water purification, usage of polluted water, preparation of drinking water... An addition as a elevator tower was constructed on the side of the structure to provide access on every storeys of the water museum.[57] The material of addition is totally different and new materials that makes the structure different from the existent.

The Duisburg Nord Landschaftspark is another example with the intervention to the open areas and mechanical components. The 230 hectare project was developed in phases from 1989 to 2002. The site was redeveloped as a park while maintaining the industrial components and allowing plants to exhibit the process of natural succession and gradually become established among the industrial ruins. The three blast furnaces were conserved. Among major elements are a railroad park consisting of the raised ribbons of old rail-beds and manmade topography, new bridges and walking paths, a water park and fields of vegetation situated between more linear elements. The large multifunctional plaza used for events; and a central Blast Furnace Park with elevated observation platforms, climbing walls, rock gardens and public spaces.[58]

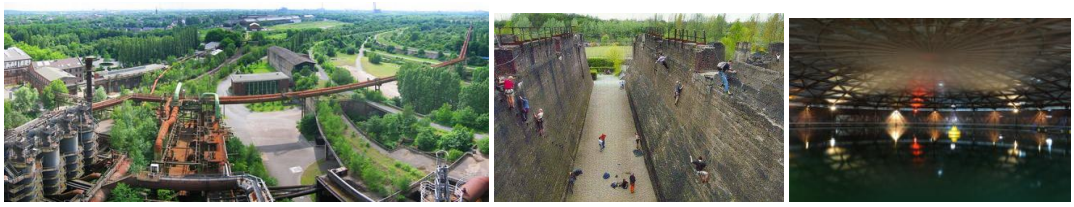


Figure 13: The Duisburg Nord Landschaftspark today (*http://en.landschaftspark.de/*, accessed on May 05, 2011)

[57] Köksal, T. Gül, 2002, *İstanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri,* unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul

[58] Zollverein Visitor Portal, *http://www.zollverein.de/,* accessed on October 05, 2011

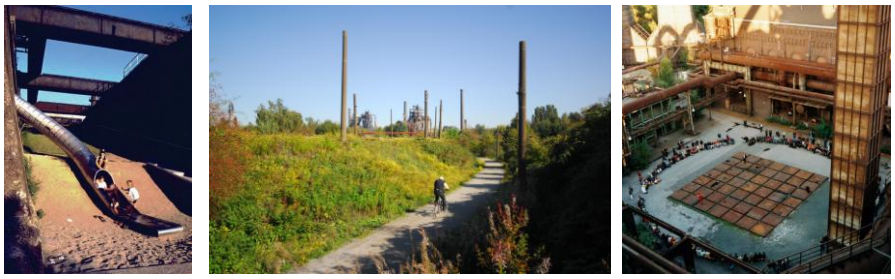


Figure 14: The Duisburg Nord Landschaftspark today (*http://en.landschaftspark.de/*, accessed on October 05, 2011)

The new design such as The Zollverein School was opened in 2006 and designed by the Japanese architectural office SANAA. The grey cubic building is a neutral and identifiable design with its materials between industrial structures.

Figure 15: The Zollverein School (*http://en.landschaftspark.de/,* accessed on October 05, 2011)

c. 798 Art Zone/Dashanzi, Beijing

Dashanzi is 30 ha area on the Northeast of Beijing (Northeast of the China) that called as 798 Art District or Factory 798. The site is near the Beijing International airport, the embassy district and the Central Academy of Fine Arts. The Factory 798 is only one of several structures within a complex formerly known as Military Factory Buildings, in need of the electronic military components and converted into art zone.

Figure 16: The 798 Art Zone today (*http://www.cityofsound.com/blog/2010/12/798-art-zonedashanzi-beijing.html,* accessed on 10 April, 2011)

The Dashanzi factory complex was established on the "Socialist Unification Plan" of military-industrial cooperation between the Soviet Union and the Republic of China. In 1951, the six factories (706, 707, 798…) formed the first electronic components production area of China in Northeastern Beijing in the 1950s during the First Five Year Plan period. The project was done in early 1952 and a Chinese preparatory group was sent to East Berlin to prepare design plans and Joint Factory 718 began production in 1957. The architectural plans were designed by the Germans with the functional Bauhaus influences over the more ornamental Soviet style.[59] By the late 1980's and early 1990's, most sub-factories had ceased production. The Dashanzi factory complex was vacant, when most of Beijing's contemporary artists were looking for new spaces. Then in 1995, Beijing's Central Academy of Fine Arts (CAFA), looking for cheap, ample workshop space away from downtown, set up in the now defunct Factory 706.

In 2000, the 798 and 718 Factories were charged by Qixing Group. The artists began to move the area and rent some of the places for art studios due to their spatial capacity and low rent prices. With the first artists moving in, the transition of the factory complex into an art district had begun. In the first stage the relations between the artists and their landlord, the Seven Star Group (Qi Xing Jituan), were still friendly. The Seven Star Group is a stateowned enterprise which was established at the end of the year 2000 and which received the property rights of the entire 718 factory complex from the Chinese government, including the property rights of factory 798. The artists pay rents and with these rent revenues; the Seven Stars Group paid reparations and pensions to the former employees of 798 factory.[60] The Seven Stars Group made plans to evict all the artists, terminate the plant

[59] The design of the buildings are defined as " Most buildings are large space of 1-3 storey heights, with low building density. The large interior spaces and the skylights designed to let the maximum amount of natural light into the workplace to meet the needs of the production of the electronic industry. Arch-supported sections of the ceiling would curve upwards; this pattern would be repeated several times in the larger rooms, giving the roof its characteristic saw tooth-like appearance."
Wang, J., Li , S. , 2009, *"The Rhetoric and Reality of Culture- Led Urban Regeneration- A Comparison of Beijing and Shanghai, China", The 4th International Conference of the International Forum on Urbanism (IFoU),* Amsterdam/Delft

[60] The Seven Stars management group of the art district in Beijing, a clan of untrained artists that turned out original work.

lease and to demolish 798, to replace it with an electronics hub. As a result, the boycott by the artists and criticizing from the media were begun.

The establishment of the Arts Zone Management Committee by Qixing Group caused many improvements; the service and management was developed according to the government guidance[61], policy and planning; a platform was set up for artists to participate. The dispute between the government, artists and people surrounding the area had risen in the implementation. The artists protested this and held several high profile exhibitions and festival to raise brand awareness and to gather support to stop the imminent demolition of 798 Art Zone. This worked, as the government of Beijing city struck off the plans to build an electronic hub. The government started to support 798 as a tourist attraction. Due to this development, rents have risen and government control in the art district has increased. This has caused some artists to leave 798 to move elsewhere. The result was to reduce the social identity of the urban environmental management. Due to its architectural design and accessibility; the authorities, art institutions and artists came to rent the vacant plants and transformed them; in time formed a district with galleries, art studios, cultural companies, fashion shops etc. Today most of the properties are rented.

The restoration works were commissioned to the professional architects. The Government reconstructed the old industrial building to revitalize the city. However, the majority of the artists have different approaches in heritage conservation. The personal appreciation of history are seen on the design plans. Most artists did more reduction than addition constrained by their economic capability and divided the interior space to separate living and working zones.[62] The artists conserved some parts of industrial machinery and the red banners on the walls. While the original architectural features were retained, the new elements, forms and materials (from structural glass curtain walls to aluminium surfaces) were introduced by developing alternative concepts as experimental that contrasted with one another visually. Every surface in the place was used for the canvases of the artists.

The 708 Factory and Designer Park are examined to indicate the transformations in the area. Artist Huang Rui designed the Gallery[63] in 2003. More than one hundred million RMB has been invested to reconstruction. This place is both a combination of industry and art simultaneously. There are café-bars, publishing houses, art bookshops and gift shops. Several machines, that were left from the production line, were kept. As an addition, a glass-

[61] In 2007, the Beijing Industrial Promotion Board, the Planning Committee and the Cultural Heritage Board issued "the guidance for the protection and utilization of industrial resources and the development on the cultural and creative industries in Beijing"

[62] Wang, J., Li , S. , 2009, *"The Rhetoric and Reality of Culture- Led Urban Regeneration- A Comparison of Beijing and Shanghai, China", The 4th International Conference of the International Forum on Urbanism (IFoU),* Amsterdam/Delft

[63] Huang Rui (1952) is one of the Chinese Contemporary artists and was a member of the Stars Group. He was with Wang Keping and Ai Wei Wei was also one of the first artists in Beijing to work in the Dashanzi Arts District.

fronted café was built in the former office section at the end of the gallery.

Figure 17: One of the main galleries (*http://www.cityofsound.com/blog/2010/12/798-art-zonedashanzi-beijing.html,* accessed on 10 April, 2011)

The 751 factory as called today as D•PARK (Designer Park), which was established in 1957. At that time, 751 was the power supplier for the whole factory area and till 1964, developed to supply coal gas for other areas near the factory. In 2003, the factory ceased production and became abandoned. The development of the 751 Factory was not as spontaneous as 798. In 2006, with the support and coordination of Beijing Municipal Bureau of Industry Promotion, the Zhengdong Group(a wholly owned subsidiary) and the China Fashion Association agreed to develop 751 as a fashion-design park. In 2007, D•PARK (Designer Park) was established at the site of 751 factory. The workshop, a huge tank that was used for the coal gas storage were decided as platformw for fashion shows and exhibitions. The workshops, old train engines and rails, machines, tanks and chimneys are presented. Before the opening of D•PARK in 2007, some fashion designers had already moved in and established their studios in 751.[64]

Figure 18: D•PARK (Designer Park) (*http://www.cityofsound.com/blog/2010/12/798-art-zonedashanzi-beijing.html,* accessed on 10 April, 2011)

[64] Hill, Dan, "798 Art Zone/Dashanzi, Beijing", *http://www.cityofsound.com/blog/2010/12/798-art-zonedashanzi-beijing.html,* accessed on 10 April, 2011

2.3.2.2 In Complex or Building Scale

In the complex or building scale, the intervention to the industrial heritage has different approaches according to the type of the intervention and reuse of the structure. These approaches are defined according to G., Köksal and they were selected to indicate them;

a. Any intervention and a new function is not offered, the building or complex are conserved as it stands

- Völklingen Ironworks transformed into the European Centre for Art and Industrial Culture, Saarland, Germany

The first works was established on the site by Julius Buch who was a Cologne engineer in 1873 to produce iron beams and railway vagons. The factory was closed in 1879 and was acquired by Karl Rüchling two years later. The first blast furnace was built in 1882-83 and four more furnaces were added between 1885- 1893. A coking plant was added in 1897, and three years later the first gas-blowing engines were introduced.In the end of World War II until pig-iron production ceased in 1986 only minor maintenance took place.

The complex was in the project list of IBA (Internationale Bauausstellung), the decision for the new function of the complex could not be given due to the conservation and reuse of these areas are difficult. The complex was transformed into an open air museum involving art and culture by conserving the mechanical equipments. The public participation was provided by visual and print media, symposiums and meetings.

Figure 19: Völklingen Ironworks transformed into the European Centre for Art and Industrial Culture, Saarland (*http://whc.unesco.org/en/list/687,* accessed on 10 April, 2011)

In 1994, the complex is accepted into World heritage list by UNESCO because of “Although the Völklingen Ironworks went out of production comparatively recently, they are the only intact example, in the whole of Western Europe and North America, of an integrated ironworks that was built and equipped in the 19th and 20th centuries and has remained intact.” Between 1989- 1999; European Union, German State and Academy of Fine Arts Saar cooperated to open the European Centre for Art and Industrial Culture. In the conservation process, no intervention was applied. Laser lightening system was developed to use the area at nignt.[65]

b. Minimum intervention is made; it continues its previous function and beside this, a new function can be offered.This method is generally used for the structures that continue their function. (Köksal, G.)

- Kreuzberg Engine Works transformed into the Offices, Berlin, Germany

The Kreuzberg Engine Works was constructed in 19th century and consists of five storey height engine work building (1883) and two storey height workshop building (1888). The factory ended the production in 1980 and restorated between 1985- 1989 by the municipality and owners.

Figure 20: Kreuzberg Engine Works transformed into the Offices, Berlin (Köksal, 2002)

The ground floor is functioned as storage and production, the upper levels are uses as architect office, print atelier. The space is convenient to the function, so the levels were not divided. The installations such as air conditioning, lightening, security were done. The iron columns were covered by protective material against fire. For the independent floor uses, the wet areas were redesigned. An exterior elevator and stair were added.

[65] UNESCO, 1994, “Völklingen Ironworks”, *http://whc.unesco.org/en/list/687,* State of Saarland, Germany

c. Necessary interventions and additions are made; new function as a technical or industrial museum is applied.

The museum function could not be given every industrial structure; it is proper to transform structures that have mechanical equipments, is not damaged and can represent technical information. The industrial structures can be understandable by the production process, so the mechanical equipments are significant data.[66]

- The Templeborough Steel Works transformed into the Magna Science Centre , Rotherham, England

The Templeborough Steel Works was established in 1917. Due to the technological improvement and increase in costs, the factory was closed in the beginning of the 1990's. The transformation was supported by the England Millenium Commission and planned by WilkinsonEyre Architects.

Figure 21: The Templeborough Steel Works transformed into the Magna Science Centre , Rotherham (Köksal, 2002)

The structure maintains its mechanical equipments and technical characteristics. The structure was divided into five pavilions; in which the steel production process were presented. The steel furnaces were conserved and displayed. To provide the integrity of the building to the site, the landscape is designed as a large outdoor play area and water play area.[67]

[66] Köksal, T. Gül, 2002, *İstanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri,* unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul

[67] Yıldırım, Nurşah, 2007, Endüstri Arkeolojisi Kavramı ve Tire'de Bulunan Endüstri Yapılarının Endüstri Arkeolojisi Kapsamında İncelenmesi, Yeni İşlev Önerileri, unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, YTÜ, İstanbul

d. Necessary interventions and additions are made; a new function can be offered. It can be generally cultural and artistic use, which is open to public.

The structures that ended their function and abandoned are deprived from maintenance and repair which caused to increase the destruction due to the time, natural factors, physical conditions, vandalism. In these circumstances, one of the conservation option is refunctioning. The aim of this method must be reuse the structure with necessary interventions instead of demolishment. To conserve the technological and social aspects of these buildings, the scientific studies should be done more.[68] After understanding the structure, it can not be perceived as a core; all of the authentic characteristics such as mechanical equipments, landscape elements must be preserved. As declared in the Nara Document on Authenticity " The conservation of cultural heritage in all its forms and historical periods is rooted in the values attributed to the heritage. Our ability to understand these values depends, in part, on the degree to which information sources about these values may be understood as credible or truthful. Knowledge and understanding of these sources of information, in relation to original and subsequent characteristics of the cultural heritage, and their meaning, is a requisite basis for assessing all aspects of authenticity."[69] Generally, as a new function the public cultural or art use are chosen. [70]

The Oberhausen Gasometer and Bochum Jahrhunderthalle is an example of the approach.[71]

- Oberhausen Gasometer, Oberhausen, Germany

Between 1927-1929, the gasometer was constructed by the Rhine-Herne Canal gas holder completed with a height of 117.5 m and a diameter of 67.6 m. During the World War II, the Oberhausen Gasometer was hit by bombs several times, but had to be shut down in 1945. After the war, a fire happened in 1946 and had to be demolished except the foundations. During reconstruction, which took until 1949; various structural elements, including the roof were re-used. The Gasometer became derelict in 1988.

The citizens of Oberhausen, the city council, the regional government of North Rhine-Westphalia and the Emscher Park International Building Exhibition discussed to use the gasometer. The city council proposed to convert the Gasometer into an exhibition hall.

[68] Blockley, Marion, 1999, "Preservation, Restoration and Presentation of the Industrial Heritage, a Case Study of the Ironbridge Gorge", Managing Historic Sites and Buildings, ed. D. Baker and G. Chitty, Routledge, London
[69] UNESCO, ICOMOS, ICCROM, 1993, The Nara Document On Authenticity, Japan
[70] Köksal, T. Gül, 2002, *İstanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri,* unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul
[71] defined in Oberhausen Gasometer, Oberhausen in 2.2.1.1. IBA Emscher Park, Ruhr Valley, Germany

Conversion and restoration cost amounted to approximately DM 16 million, most of it provided through the promotional funds of North-Rhine Westphalia.

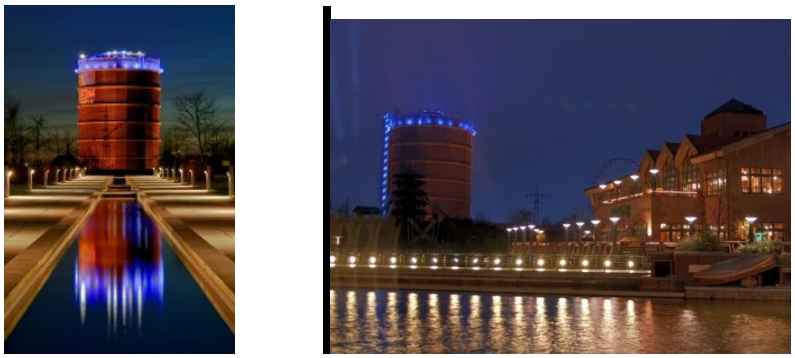


Figure 22: The Oberhausen Gasometer today (*http://en.landschaftspark.de/,* accessed on October 05, 2011)

Conversion was completed in 1993–94 by Deutsche Babcock AG. The form of the gasometer was not convenient for the exhibition function. There wasn't any vertical surfaces for objects, so the space could be used up to a definite height. These problems were solved by the restoration and design of Jürg Steiner. The former gas-pressure disc was fixed over 24 radial columns at a height of 4.50 metres. Thus the space below it is a circular 3000 square meter room for the video, art , lighted sculpture performances. A stage was situated over the disk.[72]

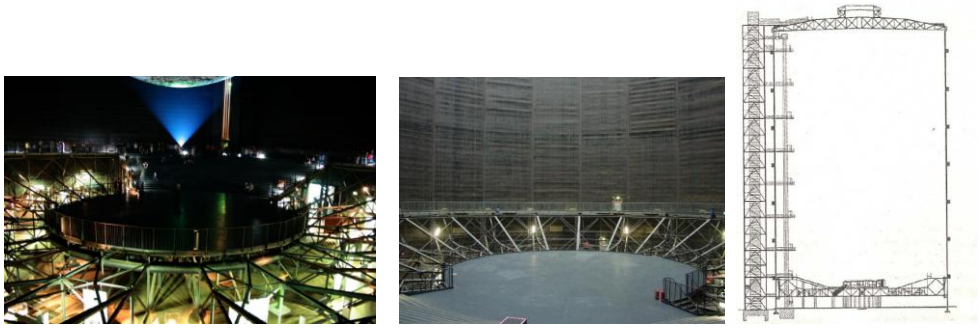


Figure 23: The Plan and Section of Oberhausen Gasometer (*http://en.landschaftspark.de/,* accessed on October 05, 2011)

[72] Gasometer Oberhausen, *http://www.gasometer.de/*, accessed on October 05, 2011
"Deutsche Babcock AG was a German manufacturing company based in Oberhausen in the Ruhr District, the center of the German economy. The company was established in 1898 as a German subsidiary of the British boilermaking company Babcock and Wilcox, Limited."

- **Bochum Jahrhunderthalle, Bochum, Germany**

The structure and the tower were constructed in 1902 as an exhibition area. Then, it was transformed into factory and after that became vacant. Consequently, the building was functioned as multi-purpose cultural centre. The spatial integrity was conserved and structure was not divided into parts. Due to the heating problems; the building has been only used in spring and summer seasons.

Figure 24: The Bochum Jahrhunderthalle Exhibition Area (*http://www.gasometer.de/*, accessed on October 05, 2011)

e. Necessary interventions and additions are made; mix use can be offered .

The Zollverein XII Coal Mine Industrial Complex in Essen and Duisburg Nord Landschaftspark are examples of this approach.[73]

-Gasometer City, Vienna, Austria

In 1892 Schimming (an engineer from Germany) was announced as the winner of the

[73] defined in the Zollverein XII Coal Mine Industrial Complex in Essen and Duisburg Nord Landschaftspark in 2.2.1.1. IBA Emscher Park, Ruhr Valley, Germany
(Köksal, T. Gül, 2002, İstanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri, unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ

competition to design new city gasworks in Vienna, Austria. In 1978, they were designated as protected historic landmarks.[74] Owing to the new technologies in gasometer construction and the transformation of the gas system, they ceased production in 1984.

Vienna developed a modelling of the protected monuments and in 1995, organized a competition for design of the new use of the structures. The chosen designs by the architects Jean Nouvel (Gasometer A), Coop Himmelblau (Gasometer B), Manfred Wehdorn (Gasometer C) and Wilhelm Holzbauer (Gasometer D) were completed between 1999 and 2001. Each gasometer was divided into several zones for living (apartments in the top), working (offices in the middle floors) and entertainment and shopping (shopping malls in the ground floors). The skybridges are significant elements in the connection of the shopping malls. The physical environment of the area was decided; so a direct connection to the Vienna underground railway system was planned. The historic exterior wall was conserved. In 2001, the Gasometers were opened. Gasometers have developed a village character all their own and are a city within a city. Indoor facilities include a music hall ,movie theatre, student dormitory, municipal archive and so on.

Coop Himmelblau created the dominant symbol of the revitalisation of the Gasometers B, added a seventy-metre high structure that contains apartments inside. The goal of this project was to preserve the brick shell and historical value of the gasometers by making an addition.

Figure 25: Gasometer B by Coop Himmelblau (*www.wiener-gasometer.at/en/,* accessed on October 05, 2011)

[74] Each hollow cylinder is identical brick masonry construction with an external diameter of 64.9m and an internal of 62.8m. The 1.7m deep foundations support the 12m high walls. The walls are 5.4m thick at the base and taper to 1.65m at the top. The iron structure of the roof was a dome with timber decking clad in zinc sheets spanning 63.6m.

- Don Valley Brick Works, Toronto, Canada

The Evergreen Brick Works is located northeast of Toronto, is composed of 16.4 hectares area. The area is situated in the Don Valley near to the the Don River and is surrounded by green landscape within an important transportation network. The site is surrounded by diverse communities. The Don Valley Brick Works was one of the largest brick manufacturers in the country between 1889-1989. In the late 1980s, the production ceased.[75]

Figure 26: The General View of the Don Valley Brick Works (*http://meganrolph.wordpress.com/2011/01/24/torontos-evergreen-brick-works/*, accessed on June 20, 2011)

Subsequently, the Toronto and Region Conservation Authority (TRCA) expropriated the property to plan the areas as open spaces and parklands to provide the historical, ecological and archaeological sustainability of the area. The industrial area consists of 16 industrial buildings and large areas with concrete structural systems. The complex with its buildings and mechanical equipments became derelict after the closure of the Don Valley Brick Works that caused the destruction. The buildings and old infrastructure, which were planned as heritage structures by the Ontario Heritage Act in 2002 to provide the sustainability of its values and significance.

Figure 27: The General View of the Don Valley Brick Works (*http://meganrolph.wordpress.com/2011/01/24/ torontos-evergreen-brick-works/,* accessed on June 20, 2011)

[75] European Route of Industrial Heritage, *http://en.erih.net/ ,* accessed on October 05, 2010

Evergreen proposed transformation of the industrial area into a new mixed-use community centre; that brings natural, cultural and social sustainability. The planning consisted of a multidisciplinary and integrative approach, that brought together members of Evergreen, the City of Toronto, the TRCA, the Ontario Heritage Trust and cooperation of architects, designers, engineers, planners, environmental and transportation consultants, local stakeholders and the public. The Master Plan for the site was obtained by the workshops and design charities.

The former industrial buildings were reused and a new building was adapted into the complex. The environmental factors such as transportation, connecting the site to local bike were decided. Evergreen is collaborating with the Canadian Green Building Council to develop and test new sustainable building techniques, with a focus on heritage conservation. Many sustainability projects such as storm water management system and planting, reuse of the salvaged materials were reused, recycling of the 75% of construction materials.

Other examples on brick and tile are that; the Boom brickmaking is transformed into the ecomuseum in Belgium and the Lage Brick Factory is transformed into industrial museum in Germany.

Table 2: The Conservation Approaches in Urban and Complex or Building Scale

	Name	Location	Construction Date	Original Use	Transformation		
					Year	Developer	Approaches
URBAN SCALE	**London Dockland**	Thames Riverfront, London, England 2.226 ha	Early 19th century	Shipping Industry	1981- 1991	LDDC (London Docklands Development Corporation) and Private Investors	- The dockland was divided into areas with different functions (Bermodsey, Surrey Docks, Wapping, Isle of Dogs, Royal Docks) - The historic buildings were conserved (totally and partially) or destroyed according to the functions
	IBA Emscher Park	Ruhr Valley, Germany 45.754 ha covering 17 cities	Early 20th century	Coal Mining and Steel Manufacturing	1989- 2014	IBA, North-Rhine Westphalia Region, European Union and Private Investors	- Planning the urban and building scale areas as a whole - Rebuild the Emscher landscape park - Conservation and adaptive uses of industrial structures (Zeche Zollverein XII Coal Mine Industrial Complex, Duisburg Nord Landschaftspark, Bochum Jahrhunderthalle, Oberhausen Gasometer, The Mülheim Aquarius Water Museum)
	798 Art Zone	Northeast of Beijing, China 100 ha	1950	Electronic Industry	1995-2000	Central Academy of Fine Art, Artists, Cultural Organizations	- Conservation of the structures and mcehanical equipments(798 Space Gallery, Designer Park, Ullens Center for Contemporary Art) - Transformation of the structures and open areas into art zone
COMPLEX OR BUILDING SCALE	**Völklingen Ironworks Today European Centre for Art and Industrial Culture**	Saarland, Germany	1873	Metal Industry (Iron)	1989- 1999	IBA, European Union, German State and Academy of Fine Arts Saar	- No intervention and a new function was not offered, the complex and mechanical equipments were conserved as it standed.
	Kreuzberg Engine Works Today Production and Office Building	Berlin, Germany	19th century	Machinery Industry	1985- 1989	Municipality and Owners	- Minimum intervention was made and continued previous function (production, storage); beside this, a new function (architect office was offered
	Templeborough Steel Works Today Magna Science Centre	Rotherdam, England	1917	Metal Industry (Steel)	2001	England Millennium Commission	- Necessary interventions and additions were made; new function as an industrial museum was applied
	Oberhausen Gasometer	Oberhausen , Emscher Park, Germany	1927	Gasometer	1993- 1994	North-Rhine Westphalia Region	- Necessary interventions and additions were made; a new function as an exhibition hall was offerred
	Hangzhou Xintiandi Cast Iron Factory	Hangzhou, Zheijang , China		Metal Industry (Iron)	2010- 2013	Hangzhou New Land Group	- Necessary interventions and additions were made; commercial use was offerred
	Zeche Zollverein XII Coal Mine Industrial Complex	Essen, Emscher Park, Germany	1847	Coal Mine Industry	2001- 2002	Nordrhein-Westfalen Region, German State and European Community	- Necessary interventions and additions were made; mix use was offered - The conservation and reuse projects were planned (boiler house, coal washing plant, Zollverein School, Zollverein Park)
	Duisburg Nord Landschaftspark	Duisburg, Emscher Park, Germany	Mid 19th century	Coal and Steel Industry	1989- 2002	Nordrhein-Westfalen Region, German State and European Community	- Necessary interventions and additions were made; mix use was offered - Planned as an industrial park
	Gasometer City	Vienna, Austria	1892	Gasometer	1999-2001		- Necessary interventions and additions were made; mix use was offered - Each gasometer was divided into several zones for living (apartments in the top), working (offices in the middle floors) and entertainment and shopping (shopping malls in the ground floors)

Consequently; the conservation approaches are studied in two scales and under the scales, the groups were formed. For the urban scale industrial areas, three examples are analysed and these projects are determined according to their conservation approach, reuse decision, administrative and financial model. As the first approach that is analysed in London Dockland is to develop different principles in the area. For instance demolishing some parts of the area to re-function and conserving other parts of the area. The state owned private enterprise LDDC was responsible of the planning, the financial sources were decided as government grants and sales revenue of the area. In Emscher Park, the areas were planned as a whole in every scale and different public uses were connected in an urban park. The industrial structures and mechanical equipments were conserved. The administration was provided by IBA. The projects were financed by the municipalities and private enterprises and a pool to share the revenues was planned. The competitions for project areas were arranged. In Beijing Example, the interventions started spontaneously by the artists and proceeded through the constitution of the management policies by state owned enterprise (Star Group). The Star Group took all of the property rights from the state. However; for the structures, different interventions are applied. Except the Beijing example, the areas have various land ownerships; though, different solutions were proposed. In every example, an establishment to develop the principles for the areas were organized. All of the organizations are state owned private enterprises indicating the states influence on these kinds of projects.

The complex and building scale areas were grouped according to the reuse and conservation intervention. The use of the areas can be conserved or functioned with new proposals. The decision is determined according to the conservation condition of the structures. Generally, the conserved structures with their mechanical equipments and landscapes were transformed into museums that can obtain the awareness on tangible values. According to the type of the refunctioning, the interventions are required.

In the world, there are limited examples in the transformation of the brick and tile factories. The existence examples have restricted information. The reason could be the spatial characters of the structures are not adequate as other industrial complexes. Another can be with the technological improvement many structures in the complexes had already been destroyed before the transformation process.

2.3.3. Conservation Values of Industrial Heritage

The value is defined as “the usefulness, helpfulness or importance of something especially in comparison with other things.”[76]

[76] Oxford English Dictionary, *http://dictionary.oed.com/*, accessed on April 19, 2011

The earliest publication on the values was an article by Alois Riegl, Professor for History of Art at the University of Vienna in 1902 under the title “Modern Cult of Monuments” in which he discussed the definition of monument and evaluation on value types. Alois Riegl distinguished between two kinds of monuments: intentional and unintentional. An intentional monument is "a human creation, erected for the specific purpose of keeping single human deeds or events (or a combination thereof) alive in the minds of future generations".

Unintentional monuments are “much more numerous, are remains whose meaning is determined not by their makers, but by our modern perceptions of these monuments.” Riegl grouped values into two as commemorative values and present day values. The former, “values of the past” as explained by author, includes age value (shows itself in the monument’s dated appearance), historical value (arises from stage it represents) and use value (refers to the benefits to people using monuments for utilitarian purposes). Secondly, present-day values, which are formed by contemporary needs and practical uses, consist of two main groups: use value (gained by continuous use of monument) and art value (described with newness and relative-art values). His study concentrated on the monuments and art works in the architectural scale. In time, the concept started to deal with different scales, monument and its immediate surroundings, complex of buildings, settlement, region, urban, natural and rural settlement scales.[77]

The “intangible heritage” arouse in 1990’s and described in the “Convention for the Safeguarding of the Intangible Cultural Heritage” published by UNESCO in 2003 as:
“… the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.”[78] The intangible values are associated with the social characteristics of the heritage.

Many researchers have continued with the studies on values assigned to cultural heritage. There have been references on values of cultural heritage in many international documents; such as Venice Charter (1965), Declaration of Amsterdam (1975) and the Nara Document on Authenticity (2007).[79]

[77] Riegl, Alois, 1982, “The Modern Cult of Monuments: Its Character and Origin”, *Oppositions,* New York, Volume: 25, pp.21-51
[78] *Convention for the Safeguarding of the Intangible Cultural Heritage*, 17 October 2003, Paris, *http://www.unesco.org/ culture /ich/index.php?pg=00102#TOC10*, accessed on March 20, 2011
[79] Kılınç, Ayşem, 2009, *Value Assessment for İndustrial Heritage in Zonguldak,* unpublished master’s thesis submitted to Graduate School of Natural and Applied Sciences, METU, Ankara

Feilden and Jokilehto (1998) produced a typology of values for the management of World Heritage Sites and different than Riegl's approach divided values into two groups as cultural and contemporary socio-economic. According to Fielden and Jokiletho "The cultural value includes identity value (related to the emotional ties of society to specific objects or sites), relative artistic or technical value (based on research and the significance of technical, structural and functional concept and workmanship of the heritage) and rarity value (defines the resource's representativeness or uniqueness). Contemporary socio-economic values consist of five subgroups: economic value (generated by the heritage resource or by conservation action), functional value (continuity of the original function or the initiation of a compatible use), educational value (the awareness of culture and the history), social value (related to traditional social activities and to compatible present-day use) and political value (related to specific events in the history of the heritage resource)."[80]

Randall Mason divides values into two main groups: sociocultural (historical, cultural/symbolic, social, spiritual/ religious, aesthetic) and economic values (use/market, nonuse/nonmarket).[81]

Emre Madran and Nimet Özgönül defined the continuity, historical, commemorative, mythological, artistic/ technical, authenticity, rarity, uniqueness, group, plurality, homogeneity, economic, functional, traditional, educational and document values of cultural and natural heritage with appropriate examples.[82]

The criterias in the Gül Köksal thesis "some proposals for the conservation and reuse of industrial heritage in İstanbul" are historical importance, functional importance, cultural importance, symbolic importance, architectural-artistic importance, rarity value, continuity in use, importance for industrial archaeology, originality value (design, material, construction technique, location, equipments), and environmental importance (regional, urban, national, international). "The importance for industrial archaeology" is emphasized in this thesis other than other studies. The author explains this article as "importance in terms of history of industry with regard to construction technique, production system and technology".[83]

In the end of these discussions, Ayşem Kılınç grouped tangible and intangible values of cultural heritage especially for industrial heritage according to their origins as **intrinsic values, extrinsic values** and **economic values**.

[80] Feilden, B.,M.., Jokilehto, J.,1998, *Management Guidelines for World Heritage Sites*, ICCROM, Rome, pp.18-19
[81] Mason, Randall, 2002, "Assessing values in conservation planning: methodological issues and choices", *Assessing Values of Cultural Heritage*, ed. M. De la Torre, The Getty Conservation Institute, Los Angeles, p.9
[82] Madran, Emre and Özgönül, Nimet, 2005, *Kültürel ve Doğal Değerlerin Korunması*, TMMOB Mimarlar Odası, Ankara, pp.61-75
[83] Köksal, T. Gül, 2002, İ*stanbul'daki Endüstri Mirası için Koruma ve Yeniden Kullanım Önerileri*, unpublished PhD thesis submitted to Graduate School of Natural and Applied Sciences, İTÜ, İstanbul

a. Intrinsic values: These values are originating from the monument itself belonging to the essential nature or constitution of buildi

ngs such as its construction date, history, construction technique, used materials…

Age value: defines the monument as an organic object in a state of degradation from the moment it is created. It formes on a visual appreciation of age, regardless of historical or artistic considerations. Concepts such as patina and decay are associated with age value.

Historical value: presents from the past people, events and aspects of life these can be connected through a place. That indicated the monument as representative of a particular aspect of a precise moment in history. (national, regional or local).

> "The historical value of a monument arises from the particular, individual stage it represents in the development of human activity in a certain field... The more faithfully a monument's original state is preserved, the greater its historical value: disfiguration and decay detract from it... " (Riegl, 1982)

Technical/ Artistic value: If the past achievements on structure, use of material, construction technique, workmanship and mechanical equipments indicating the process are a representative example, the building can be assessed for having a technical/artistic value.

Document value derives from the potential of a place to yield evidence about construction and/or production technique, material, history, art, daily life etc. The physical remains of past human activity are the primary source of evidence about the substance and evolution of places, people and cultures. The ability to understand and interpret the evidence if it is diminished with removal or replacement.[84]

Originality Value: retaining significant fabric from the time of its construction or from later periods. Originality is defined as being primary, or produced at first hand; authenticity. Authenticity isdefined in the Nara Document on on Authenticity (2007) as;

> "The understanding of authenticity plays a fundamental role in all scientific studies of the cultural heritage, in conservation and restoration planning, as well as within the inscription procedures used for the World Heritage Convention and other cultural heritage inventories." [85]

b. Extrinsic values: Extrinsic values are attributed to monuments by people. These values develop with the contribution of public and with their ascriptions due to their life/generation-long experiences with the monument; as a result, they shape due to social, cultural and

[84] Lockhart,B.,2008, "Conservation Principles, Policies and Guidance", *http://www.english-heritage.org.uk/ publications/ conservation-principles-sustainable-management-historic environment/conservation principlespoliciesguidanceapr08web.pdf,* accessed on October 11, 2011

[85] The Nara Document on Authenticity, 1994, ICOMOS

historical background of a settlement, society, or even an individual.[86]

Aesthetic value: According to the English Heritage the aesthetic value "derives from the ways in which people draw sensory and intellectual stimulation from a place. Aesthetic values can be the result of the conscious *design* of a place; because of its design, form, material, colour, patina, quality of space."

Sociocultural value: This type of value is related to links between cultural asset and society, as social background, social climate, social duty, social fabric, social issue, social question, social virtue … and the culture of a particular society, people or period.[87]

Political value: can be simply described as relation of heritage with political ideas/matters and parallel to the historical value. The space can not be evaluated with its physical aspects only; its formation includes social and political components as well.

Symbolic value: A notable family, person, event or movement gives history a symbolic value. This value represents objects or environments that embody and transmit important cultural meanings, a particular style, architecture, period. Symbolic values derives from the sense of place and the people who draw part of their identity from it or have emotional links to it. The war and other memorials are significant aspects of collective memory and identity.

Commemorative value: The commemorative memory calls to remembrance, keep alive the memory of someone or something, as in a ceremony.[88] The individual and public memories that are bonded to a specific event period, person (architect, writer) politician originated the commemorative memory of the structure or site. The commemorative memory can be formed by an individual, it should not be consist of public memory; however the sharing of this kind of memory raises the admiration.

Educational value: The ability of historical objects to provide useful data on their origin, construction, or various material characteristics.[89]

Identity value: Feilden and Jokilehto states that "identity value is related to the emotional ties of the society to specific objects or sites, and it covers age, tradition, continuity, memorial, legendary, wonder, sentiment, spiritual, religious; and symbolic, political, patriotic,

[86] Kılınç, Ayşem, 2009, *Value Assessment for İndustrial Heritage in Zonguldak,* unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, METU, Ankara
[87] Oxford English Dictionary, *http://dictionary.oed.com/*, accessed on April 19, 2011
[88] The Free Dictionary, *http://freedictionary.com/*, accessed on September 19, 2012
[89] Lockhart,B.,2008, "Conservation Principles, Policies and Guidance", *http://www.english-heritage.org.uk/publications/ conservation-principles-sustainable-management-historic environment/conservation principlespoliciesguidanceapr08web.pdf,* accessed on October 11, 2011

and nationalistic values."[90]

Group Value: a part of buildings, structures and sites taken together, have a coherence because of their age, style, scale, materials, use. Industrial heritage usually does not exist

Rarity value: the buildings can be "unique," "distinctive," or "rare" for being a particular building type, age, style..

c. Economic values: Economic values are related to usage and economic potentials of the monument. Land cost is an important aspect of economic values since heritage assets, especially industrial heritage assets, are subject to demolition most of the time because of their valuable lands in the centres.[91]

Use/ Functional Value: this value is defined as the ability of a building, place or landscape to provide a benefit that is typically linked to an economically justifiable purpose.(re-function) The use is one of the problems in protecting the built technical and industrial heritage.[92]

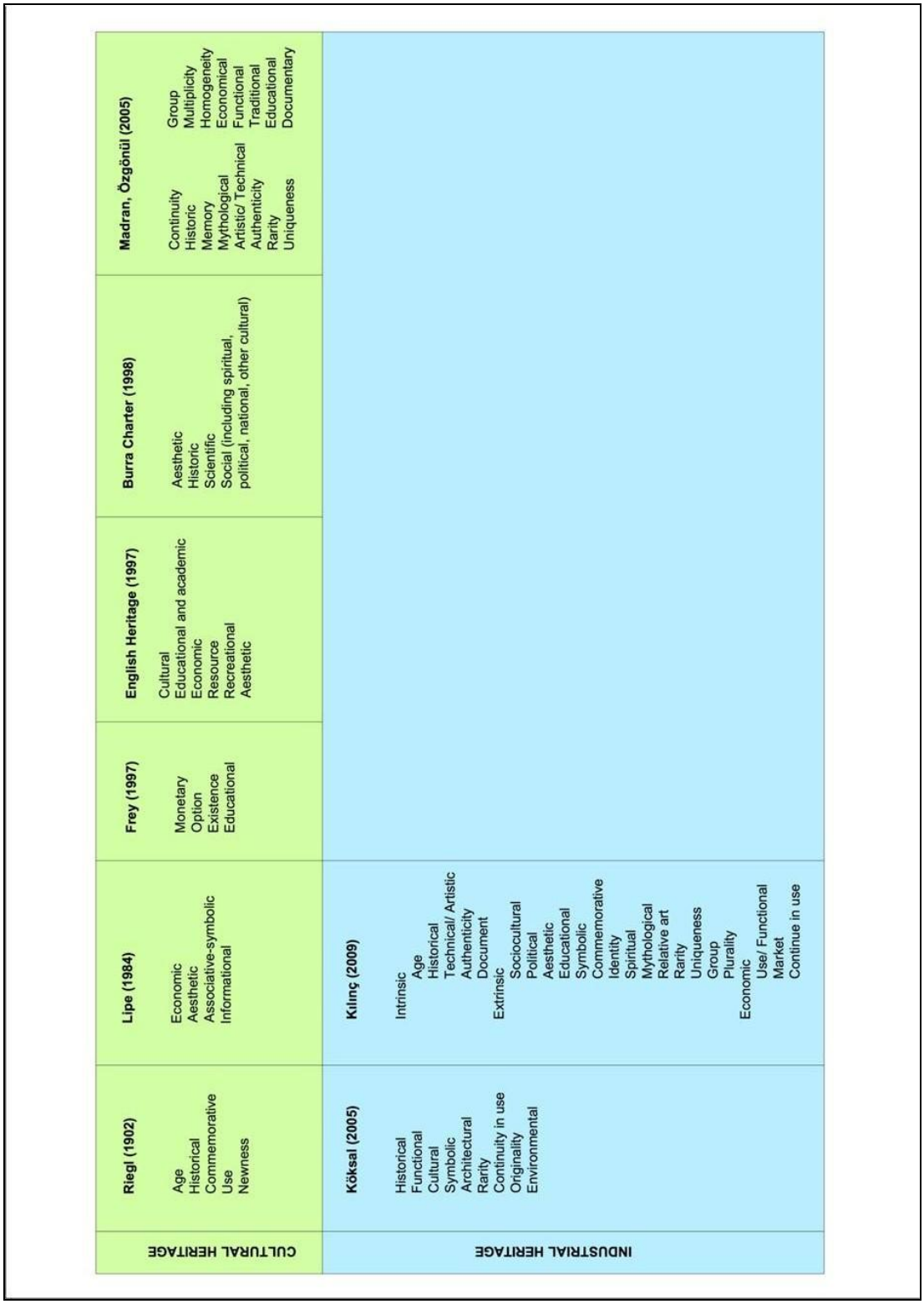
Market Value: This type of value equals to monetary worth of structure or remains that can be tradable and priceable. Each cultural structure can achieve a market value by re-use, cultural tourism, worth of land.

Continuity in use: The continuous use of the structures and complexes enchance strengthen their place in public acceptance and ease the process of conservation.[93]

The various combinations can be formed for the cultural values with respect to the approach of the international documents and many scholars as seen in the Table 3. The different evaluations should be developed according to these value types for different cases. The value types are defined from the Alois Riegl in 1902. Many scholars as Jokiletho, Fielden, Tray, Mason determined values on the cultural heritage; however the values on the industrial heritage were defined in the thesis of the Ayşem Kılınç and Gül Köksal.

[90] Feilden, B.,M.., Jokilehto, J.,1998, *Management Guidelines for World Heritage Sites*, ICCROM, Rome, pp.18-19 as a single item; it is mostly combination of various production and service units in a form of industrial site.
[91] Kılınç, Ayşem, 2009, *Value Assessment for İndustrial Heritage in Zonguldak,* unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, METU, Ankara
[92] Wells, Jeremy, Historical Significance through the Lens of Contemporary Social, Cultural, and Experiential Values, *http://heritagestudies.org/Wells%20-%20Contemporary%20Values%20in%20HP.pdf,* accessed on October 11, 2011
[93] Kılınç, Ayşem, 2009, *Value Assessment for İndustrial Heritage in Zonguldak,* unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, METU, Ankara

Table 3: The Value Types according to the International Documents and Scholars



CHAPTER 3

BRICK AND TILE INDUSTRY IN ESKİŞEHİR

3.1. City

Eskişehir is located in the North West of Anatolian region with covering 13.781 km². The city is on the west of Ankara, the southeast of Istanbul and the northeast of Kütahya and includes 12 counties and 190 villages. The location of the city is significant with being between the metropolitan cities such as İstanbul and Ankara. The area consists of two plains that are on the irrigation basin of Porsuk River which is a distributary of Sakarya River. The centre of the city is on the East of the Porsuk Plain. In 2000 general population census, Eskişehir population has declared as 706.009: 79 % of which live in the urban areas and 21 % live in the rural areas. Accordingly, the population density of the city and its conurbation area is 51 persons per meter and within urban borders is 195 persons per meter.[94]

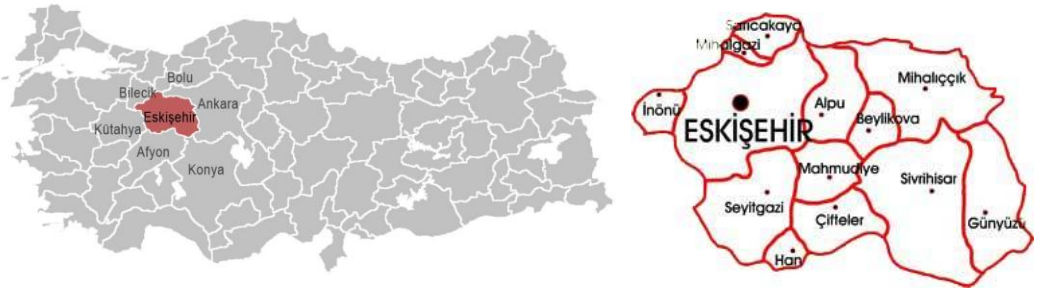


Figure 28: The location and counties of Eskişehir (produced after the map is obtained from *http://www.eskisehirliyiz.biz/ eskisehir/ilce_ index.asp*, accessed on 13 June, 2011)

Being an intersection of the railways and highways, agricultural and industrial development made Eskişehir a significant economical and industrial point in the region. Rapid growth of the urban population compared to the rural population, availability of skilled labour, being close to the markets and availability of energy ensured increasing industrial development in the city. The ratio of industrial sector according to the other economical fields in the province is 28%.[95]

[94] The Official Website of the Eskişehir Municipality, *www.eskisehir-bld.gov.tr/haberler/,* accessed on 10 April, 2011
[95] Eskişehir Sanayi Odası, 2010, " Cumhuriyet'in İlk Yıllarında Sanayi", Eso Dergi, Eskişehir

3.1.1. The General Features

With the transformation period into a Republic, Eskişehir was one of the cities chosen for industrilization. The industry is specialized in brick and tile established around the railway to obtain accessibility to transportation. In 1980, the factories became out of use, due the transfer of the factories to the organized industrial zone. With a new change in urban structure, which is caused by the establishment of universities as Anadolu and Osmangazi, the functions for students began to be formed. The last transformation in the urban identity is caused by the policies of the municipality to gain the city a local tourism character.

In the structure of the settlement, various functions can be seen at the present. Around the Porsuk River and Universities, the commercial activities are densed particularly intended for the students on the activities of food and beverage. The railway formed the location of the industrial areas through today; however the factory district is generally vacant and began to be transformed into commerce, other significant industries such as Tülomsaş and Sugar Factory, which have continued its production.

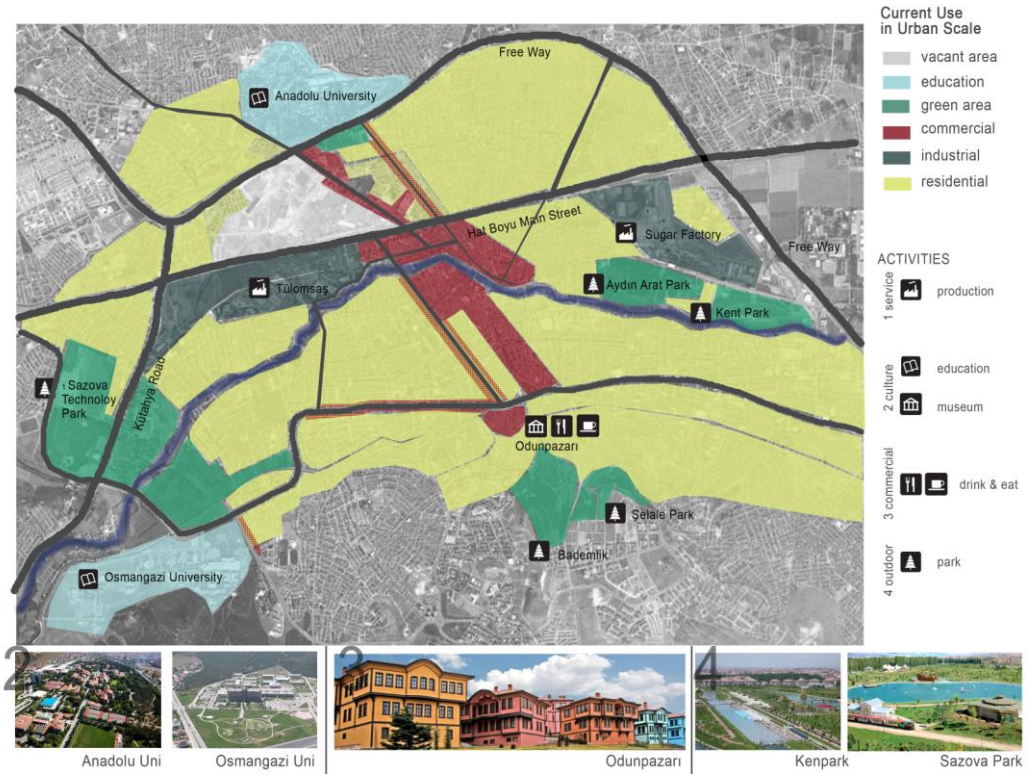


Figure 29: The Current Use in Urban Scale (produced after the map is obtained from the Google Earth , accessed on 10 June, 2012)

The design of the park areas with different concepts were expanded in the boundaries of the city with the last development of the municipality. Odunpazarı region is a historic area on the South was transformed into new uses for tourist attraction.

3.1.2. Urban Characteristics

The city passed through many transformations that resulted changes in physical, social and economical structure. The turning points in the development of the city are realized in three stages; as the establishment of the industry, that was began with the introduction of the railway; constitution of the universities and improvement of the local tourism.

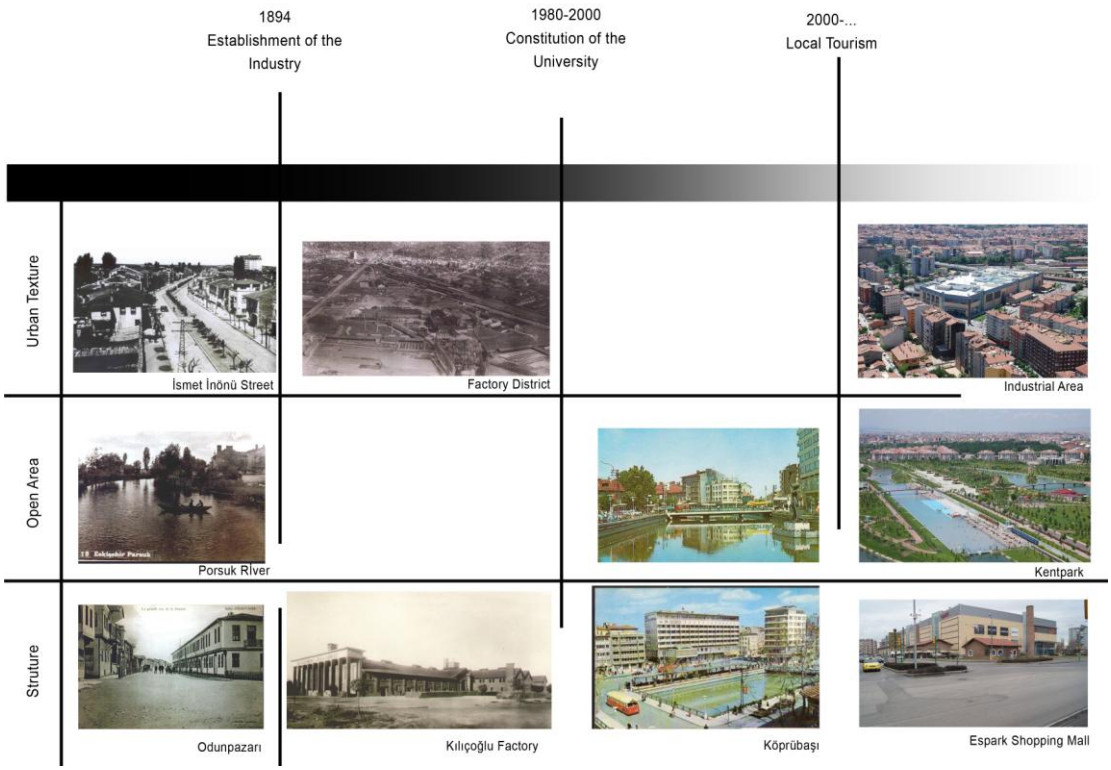


Figure 30: The dates significant in urban characteristics

First one is the beginning from the establismet of the railway with the policy of the state in Early Republic Period is that the transformation from the agrarian city character into industrial which was particularly based on the brick and tile production. The residents for workers were constructed. Besides the industrial workers, the population of the government and military officer are increased; that obtained the city a proletarian identity. After 1950, in the progress on industry continued. In this period, the progresses that can cause remarkable

changes in the character of the city weren't made. In the 1960's, the Anadolu University (faculty of economics and administrative sciences) was established. The multifunctional city identity beginned and continued with the constitution of the Osmangazi University in 1970.

The interaction between Eskisehir and the universities sets economic and socio-cultural relationships which trigger the urban transformation of the city. According to the scholar Sürmeli (2008), "Anadolu University in Eskisehir opened a new market, created employment, improved the services sector and changed existing consumption patterns in the housing market. University has a significant effect on the level of tolerance, hospitality and civility spread all around the city." [96]

Lastly, in the post 1980 period; the entrepreneurial dynamism in the city has gradually increased. Especially with the impact of privatization and export oriented production, the industrial capacity of the city has risen. [97] The economic, social and political globalization processes included Eskisehir into the entrepreneurial activity and private investments that transformed the economic structure in the post 1980 period and the 1990s. The construction of new shopping malls such as Espark, Eskisehir Neo Shopping Mall and Kanatlı Mall changed the spatial and consumption patterns of the city.[98]

Figure 31: Neo and Kanatlı Shopping Malls (*http://www.wowturkey.com,* accessed on 13 June, 2011)

[96] Sürmeli, Fevzi. 2008. Anadolu Üniversitesi'nin Eskisehir'e Etkileri ve Sehrin Üniversiteyi Algılayısı, [The Impacts of The Anadolu University on the city of Eskisehir, and City's Perception of the University] Eskisehir: Anadolu University Publications

[97] Ercan, Metin, 2000, "Politics within the State : Institutions and Dilemmas of Turkish Privitization in Comparative Perspective", Boğaziçi University, İstanbul

[98] Gökdoğan, Meral, 2006, *The Development Progress of Shopping Places; Case Study: Eskişehir,* unpublished master's thesis submitted to Graduate School of Natural and Applied Sciences, Osmangazi University, Eskişehir

Moreover, the vision of the Mayor Yılmaz Büyükerşen[99] also contributed to the livable environment with the park areas consists of recreational facilities, opera houses, theaters, artistic and cultural activities in different zones of the city.

In the late 1990's, the urban transportation was replanned and the light rail system adopted. With plan, some streets were closed to the traffic, the routes of the buses were changed with the aim of the reduction in the intensity of the traffic and formation public spaces. Another project is the rehabilitation of the Porsuk River. The new bridges in Köprübaşı and Adalar do not have any historical identity however became integrated with the river. Uğur Tanyeli defined as "…The bridges have eclectic cast iron balustrades with European Style lighting elements. "(Tanyeli 2007) The Porsuk River became disconnected to the area due to the sets and percepted as a component that separate area into two. The methods to provide relation by the water sports and boat trips have started. The Adalar around Porsuk became densed by the cafes, restaurants with these applications.[100]

One of the project is the "Odunpazarı Evleri Yasatma Projesi", that aimed to conserve the structures by the maintenance and repair to possess tourism potential. However some controversial interventions were done. The other project was prepared by the Büyükşehir Municipality as "Tarihi Odunpazarı Evleri Koruma ve Gelistirme Projesi". The new and unauthentic houses were constructed by the demolishment of the historic ones.

Beside this the green areas such as Sazova Science Art and Culture Park, Kentpark, Şelale Park with water sports, cafes, restaurants, concert space, science experiment centre (planetarium) were designed. [101]

Figure 32: The Sazova and Kentpark (*www.eskisehir-bld.gov.tr,* accessed on 10 June, 2012)

[99] The political career of Yılmaz Büyükersen formally begins in the year 1999, when he won the local elections as the candidate of the Democratic Leftist Party (DLP) and he was reelected as the Metropolitan Mayor in 2009 local elections. Büyükerşen underlines the kind insistence of Bülent Ecevit, a prominent leftist leader, the Turkish Prime Minister of that period, and the President of the DLP for his candidacy in local elections of the late 1990s, while he summarizes the political proposal made by Mr. Ecevit: "You established a university which became a model, now I ask you to make a model city, Turkey needs this" This proposal of Bülent Ecevit also gives a clear idea about the vision of Yılmaz Büyükersen and the scope of his municipal projects.
Tasçı, Cemalettin. 2009. *Yılmaz Büyükersen: Zamanı Durduran Saat*. İstanbul: Doğan Kitap
[100] Özbay, Nuray, 2009, *A Tale of Two Anatolian Cities:Globalization, Europeanization and the Political Economy of Kayseri and Eskisehir,* A Thesis Submitted to the Graduate School of Social Sciences in Partial Fulfillment of the Requirements for the Degree of Master of Arts in International Relations, Koç University, İstanbul
[101] Eskişehir Municipality, *www.eskisehir-bld.gov.tr/,* accessed on 10 April, 2011

In these progresses, the socioculture of Eskişehir has an important role. Nuray Özbay declared the cultural structure of the city as "Firstly the vivid urban culture of tolerance, coexistence of diversities and openness to change; secondly a social-democratic tradition dominant in local governance"[102] In recent years the construction of the shopping malls, office buildings, hotels particularly in the industrial area were increased. The area with the brick and tile factories obtained the city urban identity and the smokestacks of the factories have symbolical value for the public. However after the functional transfer of the structures, some of the structures were demolished or became lack of maintenance.

3.1.3. The Historical Background

Eskişehir is an important crossroad in Anatolia and has been a settlement from the ancient times. Some archaeological studies showed that in Alpanos (today known as Sarayören and located in the Northwest of the city) some items were found from the middle Palaeolithic Ages. In Berber İni (near Kümbet that is located on the South of the city) and near Alpu there were settlements from the early ages. The Hittites, Phrygians, Persians, Macedonians and Romans were settled to the area. Because of its location on the trade roads, Eskişehir was an important settlement in the era of the Hittites (beginning from the 2000 B.C). The sovereignty of the Hittites lasted in 1200 B.C.

The Phrygians came to Anatolia from Thracia in 1200 B.C and Dorylaion (today known as Eskişehir) was established by Doryleos (Phrygian King) in 700 B.C. The city was an intersection and famous with its spring water. Dorylaion (Eskişehir), Pessinus (Ballıhisar) and Midas (Yazılıkaya) are the important cities of that period.[103] The society were professioned in agricultural techniques, weaving, mining; so Dorylaion was an agricultural region and by the location of the area, commercial activities were progressed. The Yazılıkaya, which was the memorial of the Phrygian King Midas, located near to Çifteler.

After the Phrygians, the sovereignty of the Lydians started. The policy was to provide peace with other civilizations and increase commercial activities. So they built the Royal Road, which obtained connection from Sardis to Persepolis, was a commercial route. The road passed through Yazılıkaya and Pessinus that are in the border to Dorylaion.

[102] Özbay, Nuray, 2009, *A Tale of Two Anatolian Cities:Globalization, Europeanization and the Political Economy of Kayseri and Eskisehir,* A Thesis Submitted to the Graduate School of Social Sciences in Partial Fulfillment of the Requirements for the Degree of Master of Arts in International Relations, Koç University, İstanbul
[103] Atuk, Ahmet, 2002, 101 Eskişehir, Onur Matbaacılık, Ankara

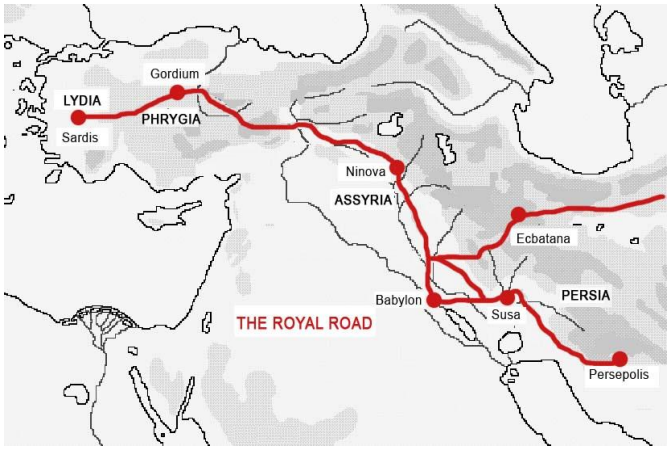


Figure 33: The Royal Road (produced after the map is obtained from *http://www.bloxoo.com/blogyazi/www.yolunneresindeyim.blogspot.com/kral-yolu,* accessed on 05 June, 2011)

The Persian dominancy of the Anatolia was started in 564 B.C and finished by the Macedonians in the Gronikos War (334 B.C). The Romans settled that region in 200 B.C. For the society, Eskişehir was a recreational area. After the division of the Roman Empire in 395 A.D., the Byzantine (the North Roman) captured the city. Thus the area was on the trade roads, the civilizations settled and established the new towns around.[104] One of them was Justinianpolis (Sivrihisar) which was established by the Byzantine Emperor Justianus. Charles (Felix-Marie) Texier (1802-1871), who was a French archaeologist and traveller, defined the city as a recreational area in the Byzantine Period where the khans and palaces were constructed.[105] In 708, the Arabian invaded Dorylaeum by Abbas Bin Velid, who was the caliphate of the Umayyad Dynasty. Eskişehir was called as “Durilia”, but Arabs invasions was not lasted long. Seljuks came to the Anatolia after the Malazgirt War (1071) with the Byzantines. It is known that some Turkish tribes were settled to the region before the war. Turks conquered Eskişehir and its environs in 1074.[106] The city was a border between Seljuks and Byzantines; so it was a significant trade centre.The Alaaddin Mosque was constructed in 1267. The location of the mosque was important; because the Odunpazarı Settlement, which was the first core of the city, was formed.

[104] İl Yıllığı Hazırlama Komitesi, 1973, *Eskişehir il yıllığı,* Eskişehir Valiliği, Eskişehir
[105] Texier, Charles, 2002, *Küçük Asya (Coğrafyası, Tarihi ve Arkeolojisi),* Enformasyon ve Dokümantasyon Hizmetleri Vakfı, Ankara
[106] İl Yıllığı Hazırlama Komitesi, 1973, *Eskişehir il yıllığı,* Eskişehir Valiliği, Eskişehir

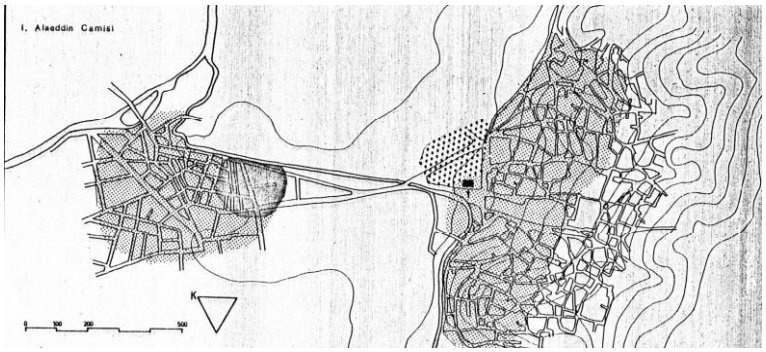


Figure 34: Eskişehir and Alaaddin Mosque in the end of 13th century (Tanyeli,1987)

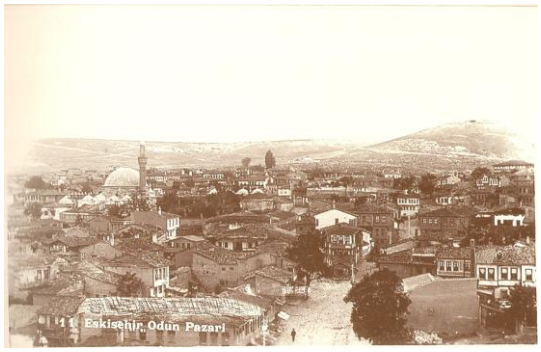


Figure 35: Odunpazarı (1930) (Atuk, 2002)

The West Mongolians (İlhaniler) invaded Anatolia with the Kösedağ War (1243). In time, the Oğuz Tribes settled Anatolia and established Karaman, Germiyan, Eşref, Hamit Oğulları and later Osmanlı Beyliği.

The Kayı Tribe, ancestors of the Ottomans came around Karadağ (on the East of Eskişehir) between 1219- 1237. In 1289, Osman Bey, who was the founder of the Ottoman Empire, settled to Eskişehir. Because of being one of the first settlement centres of the Empire, the city was improved. However, in the stagnation and decline period, the city was neglected. The centre wasn't developed and it included one or two small districts.[107] Evliya Çelebi who was the Ottoman traveller (1611- 1682), visited the region in 1648 and determines that "There are 17 districts in the city. The houses are well developed having gardens and grape vines. There are mosques and medressehes, seven elementary schools, seven religious lodges and seven commercial complexes, nearly 800 stores in the commercial area. Due to the nice weather, there are many beautiful people in Eskişehir." [108] According to Paul Lucas who was the French traveller, merchant and naturalist (1664- 1737), "The city has two parts.

[107] Atuk, Ahmet, 2002, 101 Eskişehir, Onur Matbaacilık, Ankara
[108] Çelebi, Evliya, 2005, *Evliya Çelebi Seyahatnamesi,* Yapı Kredi Yayınları, İstanbul

The houses of the Turks are on the hills of the city, which was known as Odunpazarı."[109]

In the 19th century, Eskişehir was belonged to the town of Kütahya State of Hüdavendigar Province. The wars began in different parts of the Ottoman Empire. Therefore, the city became a small and destroyed town. The population of the city started to increase by the emigrants (muhacirler) after the Ottoman-Russian War (1877-1878) and the city started to revive. In the city, different religious and ethnic groups lived. In 1893, there were 48.200 Moslems, 12.700 Greek Orthodox, 6.074 Gregorian Armenian and nearly 100 Jews. The new sections
of the town and various cultural values were formed. The Moslem quarters spread on to the Southern Hill of the city. On the East of the Porsuk River, the Greek Quarter and on the West, the Armenian Quarter developed. The hot springs and commercial district located in this area.[110]

With the transition from Ottoman Empire to the establishment of Turkish Republic, economical, industrial, political, social… changes were happened. Anadolu Osmanlı Kumpanyası or Cer Atölyesi (Railroad repair shop), which was established to require the maintenance and repair of the steam locomotives and wagons used in Baghdad-Berlin Railway by the German entrepreuners in 1894, was the base of today's Tülomsaş (Eskişehir Locomotive and Motor Industries Company).[111] Many foreign engineers and technicians especially Germans worked on the Railroad Repair Shop. The schools, shops, restaurants and hotels were opened for the personnel around the station. The establishment
was a significant step; because of being in a limited production sector in these years, having a large scale area, providing improved technological facilities and education of qualified workers.[112]

> "…With the establishment of the Railroad Repair Shop, the city was expanded four times according to before…"[113]

[109] Lucas, Paul, 1719, *Voyage du Sieur Paul Lucas, fait par ordre de Louis XIV dans la Turquie, l'Asie, Sourie,Palestine, Haute & Basse Egypte, , Rouen,* http://www.archive.org/stream/voyage dusieurpa01luca goog #page/n27/mode/2up, accessed on 2 June, 2011

[110] Atuk, Ahmet, 2002, 101 Eskişehir, Onur Matbaacilık, Ankara

[111] "Tülomsaş: is the locomotive supplier of Turkey with a experience in manufacturing and maintenance The locomotive factory in Tülomsaş, which is the largest plant is capable to carry out the manufacture of bogie, underframe and hoods of various type diesel-electric, diesel-hydraulic and electrical mainline and shunting locomotives and maintenance cars, complete assembly, painting and testing, as well as maintenance and revision of these vehicles."
The Official Website of Türkiye Lokomotif ve Sanayi, *http://www.tulomsas.com.tr/main.php?kid=67*, accessed on 14 June, 2011

[112] Babadoğan, Hale, Urban Projects Implementations Towards a European City: A Case Analysis of Eskişehir Greater Municipality, unpublished master's thesis submitted to Graduate School of Social Sciences, METU, Ankara

[113] Yurt Ansiklopedisi, 1982, *Eskişehir Maddesi CCCC-V,* Anadolu Yayıncılık, İstanbul, Volume 4, pp. 2056-2940

Figure 36: The Railroad Repair Shop (Cer Atölyesi) (Atuk, 2002)

After the construction of Berlin- Baghdad Railway in 1894, the progress in the financial sector was occurred. When the establishment of the railway started in Turkey, the route was determined according to the regions that produce the raw material and the hinterland of production centre. Eskişehir has an advantage because of its location that provides connection to the metropoles by the transportation networks.

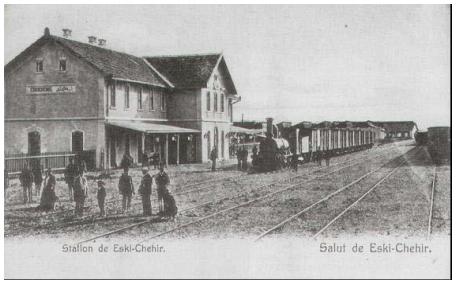


Figure 37: Eskişehir Station Building (Sarıöz, 1997)

> "…According to Tekeli, the state's ideology of the space integration can be introduced by the strategy of 'ülkeyi demir ağlarla örme" project. The central government aimed to establish a railway network for the realization of a spatial policy to provide the control, integrity of internal market, connection between producer and consumer.[114]

The economic improvement was started and the commercial class that consists of artisans,

[114] Cengizkan Ali, 2009, Fabrikada Barınmak, Erken Cumhuriyet Döneminde Türkiyede İşçi Konutları: Yaşam, Mekan ve Kent, Arkadaş Yayınevi, Ankara

merchants were moved to the city. By the progress in the economy, the industrial developments were started. So a new field of employment and the working class was developed. The houses of this society were built by the local government. For the education of these workers, the schools of apprentice were opened. The immigration after Ottoman-Russian War (1877- 1878) and rise in the number of the working class caused the increase in population. So the macroform of the city was started to change. The settlement was located on the hillside which was known as Odunpazarı. The railway passed through the plain area and the settlement was established parallel to the railway in circular form. The Crimean and Rumanian immigrants settled the area around the railway. Thus, the socio-economic and socio-cultural structure were changed. The immigrations caused the introduction of the new technologies significantly in industry. With the construction of the railway and other developments occurred after that period, were the beginning of the Industrialisation and Modernization period.

> "…In the beginning of industrialization, the period of urbanization started. The spatial and cultural structure of the city was formed by different factors. The technological progress, increase in production and population are the elements affected the differentiation in urbanization."[115]

The map (Taksim-i Arazi), which was dated to 1896, indicates the settlement area, railway establishment and agricultural lands by Erkan-ı Umumiye Dairesi.[116] According to the map; the urban structure consists of three settlements. The first one is Odunpazarı, which was the initial residential area of Eskişehir . Second one is the plain area around the Porsuk River (Köprübaşı) and the region between the railway and river, that had the commercial uses . The East side of Porsuk River, that is around the station, were settled by the immigrants. The ateliers began to be constructed in that area. Except these settlements, irregular and unplanned settlements were established.[117]

[115] Oruç, N., Aksoylu, S., *Eskişehir'de Kentleşme- Sanayileşme Etkileşimi- Bir Sanayi Kentinin Planlama ve Uygulama Sorunları Eskişehir Örneği Kolokyumu,* Dünya Şehircilik Günü Türkiye Daimi Komi, 1985

[116] Erkan-ı Umumiye Dairesi is today known as the Chief of General Staff (Genel Kurmay Başkanlığı), that commands the Armed Forces and establishing the policies and programs related with the preparation for combat of personnel, intelligence, operations, organization, training and logistic services are the responsibilities of the Turkish General Staff (The Official Website of the Turkish General Staff, *http://www.tsk.tr/eng/genel_konular/tarihce.htm, accessed* on 14 June, 2011

[117] İlgar, Evren, 2008, *City Identity and City Identity Dimension of Urban Transformation: Example of Eskişehir,* unpublished master's thesis submitted to Graduate School of Sciences Architecture Program, Anadolu University, Eskişehir

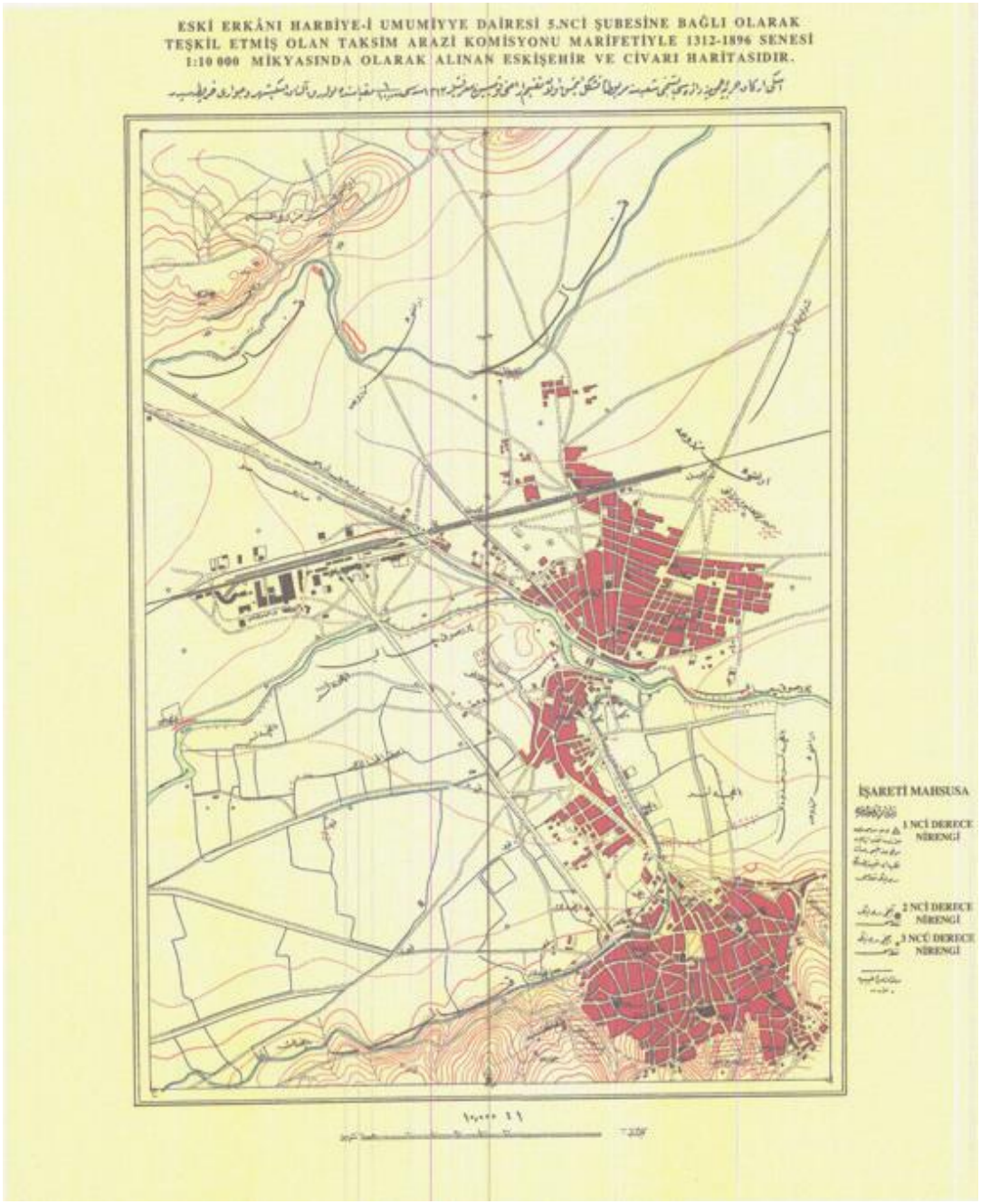


Figure 38: 1896 Eskişehir Map (Archive of the Eskişehir Municipality)

With the establishment of Turkish Republic, the politic view of the state was to originate modern industrial cities. Eskişehir is one of the Anatolian cities, which was developed with this aim. There were important political formations, industrial, economical and social developments in the establishment of Republic Period. The new structuring in Eskişehir began which was based on modernism. The city was combined with the complexes, which was an "industrial city" design. The state considered these factories as a complex and all of the units were open to public use to provide social integration. The state considered to create not only a modern industrial city, but also a modern society by establishment of the factories. The projects, designed by the national Project Competitions, were the examples of this structuring; such as Eskişehir Station Building (1946).[118] The Competition Projects indicate the strength and ideology of the state. And with these projects, the state considered the physical formation of the cities as important.

Until that period, the traditional houses had been constructed. That period effected the typology of housing and politically that indicated the transition from the administration of monarchy to the regulation of secular state.[119] For instance, near to the establishments, one storey height with a garden houses were constructed for the railway workers. For Sugar Factory employees, one storey height dwellings were built.

Between 1923-1950, the planned industrial development was started. The new state owned enterprises were established and the private enterprises continued their development in Eskişehir. The structuring around the railway continued, the hotels in that area started to be established. The traditional industry sectors of Eskişehir; flour, brick and tile factories reached a remarkable size nationwide.[120]

> "…The Industrial Compexes of Republic Period are worth to research; because of the transformation effects of factories on cities and indicating the duration of the modernization period…"[121]

The state owned enterprises and the private enterprises established. The qualified personnel trained by the state owned enterprises were an impetus for the industrial development of Eskişehir. Mustafa Kemal Atatürk in propria persona established enterprises on the brick and tile industry.

---

[118] Corporation managed the Competition: Administration of State Railway (Devlet Demiryolları Başkanlığı)
Members of the Jury: Paul Bonatz, Şekip Akalın, İrfan Kuraner, Galip Yenal, Hüseyin Kara, Sedat H. Eldem, Emin Onat, Nurettin Evin, Recai Akçay
Winners: Leyla Taylan, Ferzan Baydar
(The Official Website of the Chamber of Architects in Turkey, *www.mimarlarodasiyarişmalar.com,* accessed on April 15,2011)

[119] Yılmaz, Ebru, 2009, Decisive Role of Development Process of The City of Eskişehir and Appaering New Housing Locations During this Period, unpublished master's thesis submitted to Graduate School of Sciences Architecture Program, Osmangazi University, Eskişehir

[120] Eskişehir Sanayi Odası, 2010, " Cumhuriyet'in İlk Yıllarında Sanayi", Eso Dergi, Eskişehir

[121] Cengizkan Ali, 2009, Fabrikada Barınmak, Erken Cumhuriyet Döneminde Türkiyede İşçi Konutları: Yaşam, Mekan ve Kent, Arkadaş Yayınevi, Ankara

In the first years of Republic, the private sector of production industry was depending on the agricultural and mining (stone and soil) resources of the province. Until 1950; the food and stone-soil industry could export %80-90 of its production to other cities. The flour factories were built; which was an important area in cereal production. These mills are Yasin Çakır Flour Factory (1938), Gümülcineli Flour Factory (1948), Gamgam Flour Factory (1948), Mühendisler Flour Factory (1953), Örnek Flour Factory (1959), Pak Flour Factory (1965), Kanatlı Flour Factory (1969).

Due to the rich clay reserves, a lot of investments based on clay products were built. These are Kılıçoğlu Tile and Brick Factory (1926), Kurt Tile Factory (1928), Çiftkurt Tile Factory (1933), Aslan Tile Factory (1938), Fil Tile Factory (1942), Kartal Tile Factory (1944), Doğan Tile Factory (1948), Güneş Tile Factory (1948). As a result of these developments, Eskişehir received a share of the Marshall Aids granted by United States. The Railroad Repair Shop (Cer Atölyesi) has given under the control of Turkish Republic State Railway (TCDD) in 1924. The Aircraft Supply and Repair Plant was built in 1926. The Sugar Factory was established in 1933 by the state, which led to the new establishments of sub industries. The location of the Sugar Factory was determined according to the Ankara-Eskişehir railway line and Porsuk River, which is out of the industrial area different than other factories.

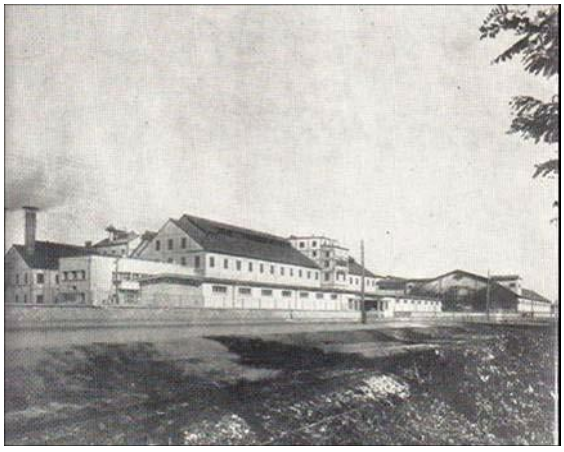


Figure 39: Eskişehir Sugar Factory (Ayhan, 2006)

After 1950, the population of the city was under the average of Turkey. The employment possibilities were less than the increase of population; so the immigration to other centers were occured.

Between 1950-1960, the small size industrial facilities were developed. After the World War II (1939- 1945), due to its geographical location and state owned enterprises led migration to the city and the urbanization was developed unplanned. The immigrants from Bulgaria and Romania settled near to the industrial area. So the integrated settlement area became more scattered. Due to the professions of immigrants (especially stove and oven production), the metal industry developed in Eskişehir. Other private industries which were improved after 1950 were food, stone and soil, machine industries.

With the support of public, Eskişehir Cement Factory were established. In 1965, Sümerbank printed cotton factory and dependently machine factory were founded. In 1969, the machine factory became independent from Sümerbank. Those factories constituted the base of Eskişehir's economy and industry for years. In 1968, the members of the Eskişehir Chamber Commerce and Industry decided to separate the chambers of commerce and industry in order to improve industrial development and to solve the problems of the industry.

In the beginning of 1970's, the manufacturing industry was developed in private sector. After separation of the chambers, the "organized industrial zone" was implemented. The accumulation of the capital was increased; due to the location of Eskişehir, improvement of the energy possibilities, incentive condition of organized industrial zone … The new sectors were improved such as metal and machine industry.[122] Due to the newly established flour and brick- tile factories nationwide, these sectors lost part of their market shares. Therefore, the flour factories switched to biscuit, candy and food production areas; the brick and tile factories switched to concrete and prefabricate building production. [123] Between 1975- 1980; the population in Eskişehir was increased, in spite of the reduction in the Turkey's population.

The replacement of the industry occurs to raise its profit. The technological improvement caused the decrease in necessity of the men power; at the same time, the increase in the demand on replacement and scale of industries. After implementation of organized industrial zone; due to the expansion of Eskişehir, the industrial structures and complexes were started to be in the city center. So their commercial value was increased. Because of causing danger structurally and "the remediation of environmental contamination", the factories which were the examples of industrial heritage were abandoned, destroyed or regenarated in the factory district. The arial projects are started to be improved by the Eskişehir Tepebaşı Municipality according to the development plan as declared in the urban characteristics.

[122] Oruç, N., Aksoylu, S., *Eskişehir'de Kentleşme- Sanayileşme Etkileşimi- Bir Sanayi Kentinin Planlama ve Uygulama Sorunları Eskişehir Örneği Kolokyumu,* Dünya Şehircilik Günü Türkiye Daimi Komi, 1985
[123] Eskişehir Sanayi Odası, 2010, " Cumhuriyet'in İlk Yıllarında Sanayi", Eso Dergi, Eskişehir

3.2. The Brick and Tile Industry

3.2.1. The Production Process of the Brick and Tile Industry

The technology and spatial character of the industrial buildings and complexes are differed by the reason of industrial production type. In brick and tile factories, the production is progressed by stages and according to these stages, the spaces are formed. According to the technology and production capacity of brick and tile factories; the industrial machineries are narrow gauge track, conveyors, vals machines, pug mill, extruding machine, mould preparation machinery, keller drying… The brick production process consists of clay extraction, clay preparation, mixing, forming or molding, drying, firing and distribution. The production stages are indicated in the table below.

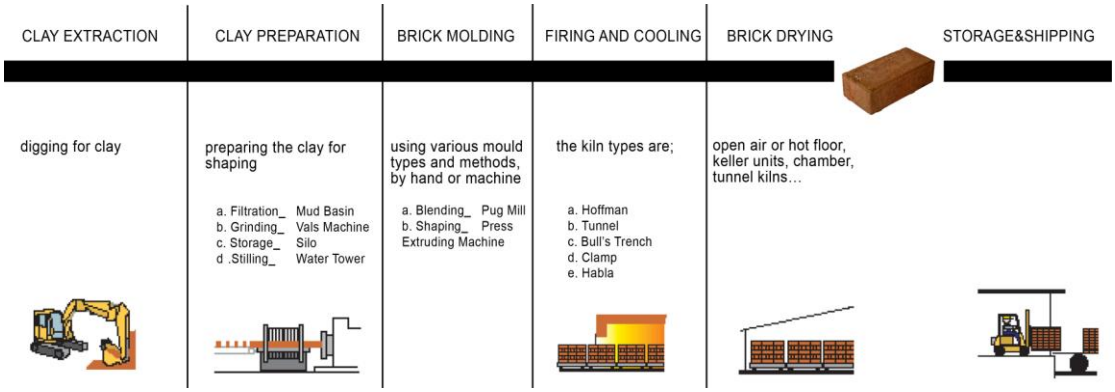


Figure 40: The Production Process of the Brick and Tile Industry

Clay Extraction: During the collection of the clay from the riverbed, agricultural lands or rice field, the top layer of soil is removed as it contains many organic impurities such as from gravel, coarse sand, lime, particle, vegetable matter…

Clay Preparation: This process is made depending on the clay properties and the finished product requirements. The preparation process typically involves mixing with water, blending and screening to ensure its consistency, crushing the raw material. The mud basins can be used to filtrate the stones. After that, the vals machines breaks the clay into small pieces.

Figure 41: Mud basin and Vals Machine in new factory of Çift Kurt

Brick Moulding: This stage contains the mixture of different types of clay to achieve the correct plasticity, optimum drying and firing conditions. According to the Regional Energy Resources Information Center "There are several processes for brick moulding including extrusion, soft mud moulding, semi-dry or dry pressing and vibration-compaction. In the moulding process, the clay is first blended in the pug mill. Next step is the extruding machine (press) to form the clay. "

Figure 42: Pug Mill and Extruding Machine (Pres) in new factory of Çift Kurt

Brick Drying: Newly formed bricks are called green bricks and can be dried naturally in open air or artificially by using some kind of dryer; chamber, tunnel kilns... This requires a large amount of heat energy, which is met by raising the temperature of the green bricks by heated air. This is because during drying process, water contained are evaporated.[124]

Brick firing: Firing is done by various kiln methods including Bull's Trench, Habla Zigzag , Hoffman, Tunnel Kilns… have been distinguished by fuel type, efficiency, position of their heat source, heat distribution and heat continuity. The kiln types, that are significant in the production process effected the architectural characteristics determined in the appendix A.

[124] Regional Energy Resources Information Center (RERIC), 2003, Brick and Ceramic Sectors, Asian Institute of Technology, Thailand

3.2.2. General Features

The industrial area is 82 hectare, which is surrounded by the Turkish State Railways (TCDD) and Tülomsaş Establishment on the South, by Ertuğrulgazi Street on the West, by the local road and Anadolu University on the North and by Üniversite Street on the East. The commercial street called as İsmet İnönü was bonded to the area on the South.

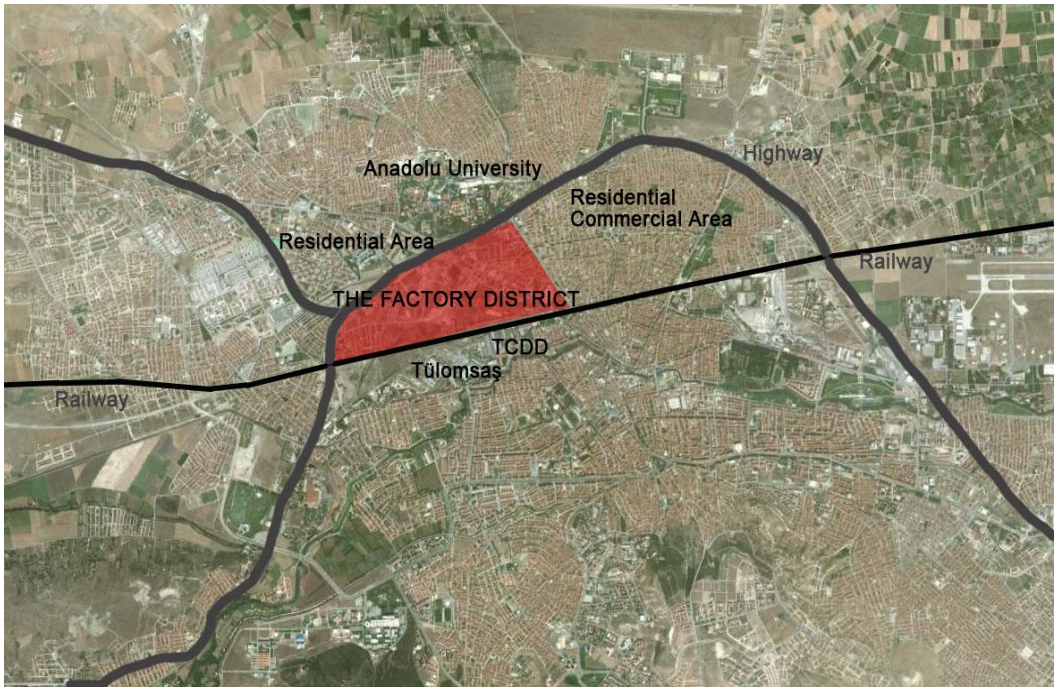


Figure 43: The location of the Industrial Area (produced after the map is obtained from the Google Earth , accessed on 10 September, 2011)

The analysis for the industrial area are done on the maps, that are produced after the site survey, development plan and google earth images. The Study Area-1 contains the railroad and the residential, commercial areas; where the industrial complexes were located in the past. Besides, the border of the Industrial Area according to the Development Plan of the municipality is indicated in the maps.

In the area, the factories are in different conditions. The Yasin Çakır Flour Factory is in a good condition and not inuse. The Turkish Grain Board (Toprak Mahsülleri Ofisi) is transformed into İbis Hotel in 2007. The administration building of the Magnesite (Lületaşı) Factory is in good condition, however the production unit was demolished. The Eti Factory is used as warehouses and selling unit. There are other transformation examples in the area; such as the lumber factory to cafe, restaurant and club(222), the Aral Wine Factory to Hayal

Kahvesi, the tire rim factory to the club (Buda). The registered Mühendisler Flour Factory, established in 1953, was fired to construct the Özdilek Shopping Centre in 2012.

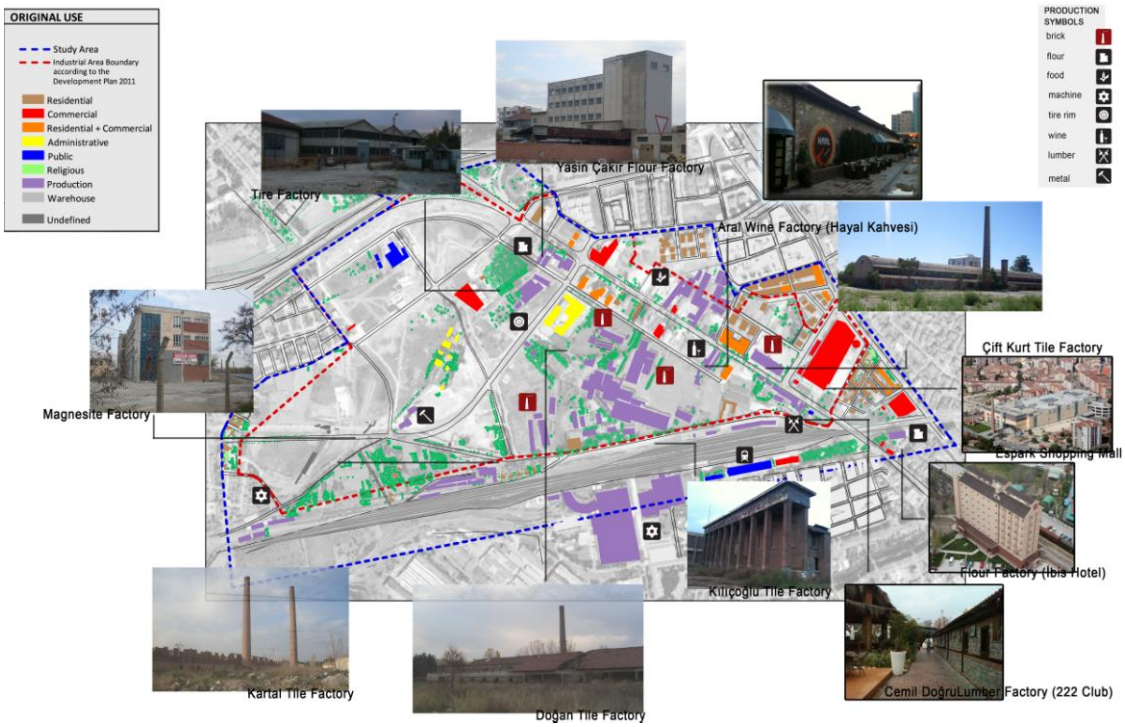


Figure 44: The Production Types of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

In the analysis of the storey height, there are residential houses with one or two storey height around the railroad. The new residential buildings, which are constructed after 2000, are more than four storey height. Especially, the buildings on the street passing parallel to the Üniversite Street were 7 or 8 storey height. The height of the industrial buildings varies according to their production type. The storey height of some structures in Kartal and Doğan Factories could not be determined due to the destruction partially.

On the original function, the area is mainly based on industry, includes the production type of the brick and tile, machine, lumber, tire rim, magnesite, flour, food and wine factories. However; today the transportation of the industrial area to the industrial organized zone; the current uses of these complexes are vacant, warehouses or commercial. Only the Tülomsaş continues its production function.

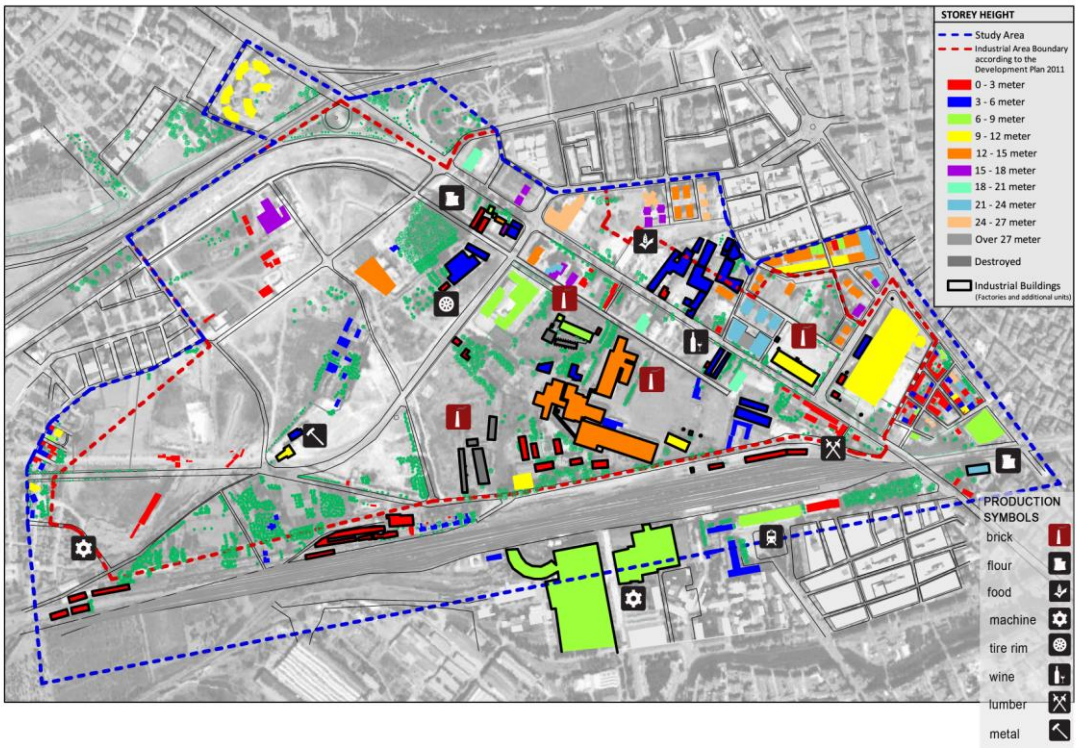


Figure 45: The Storey Height of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

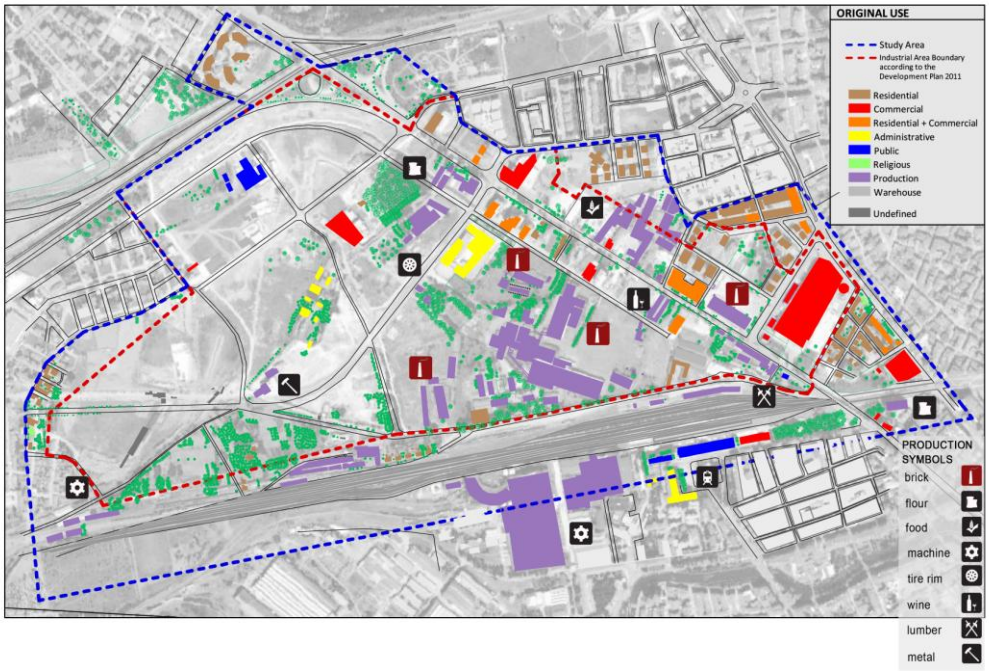


Figure 46: The Original Use of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

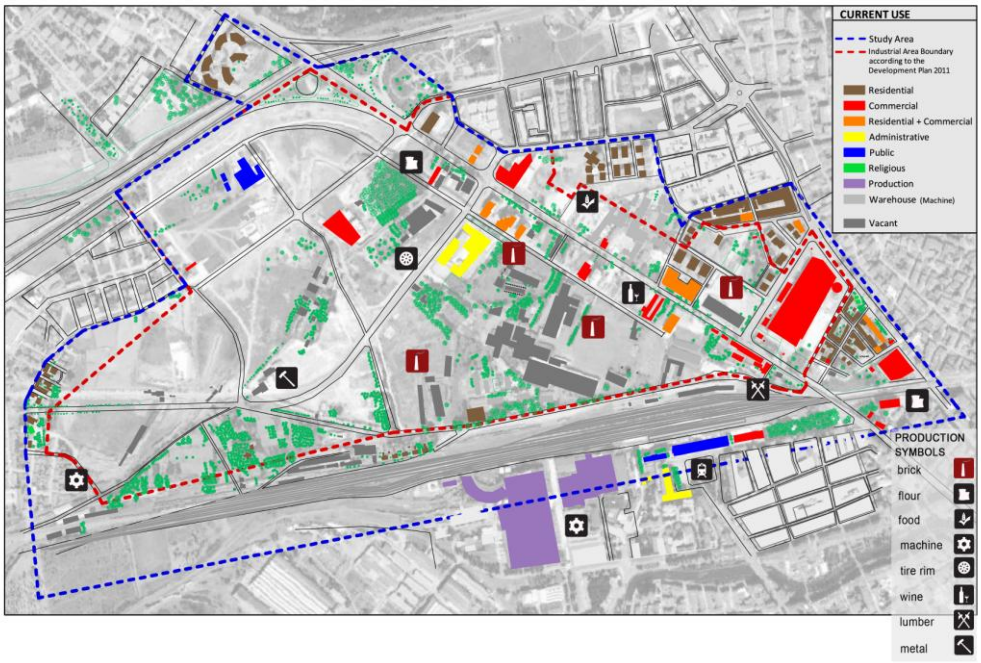


Figure 47: The Current Use of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

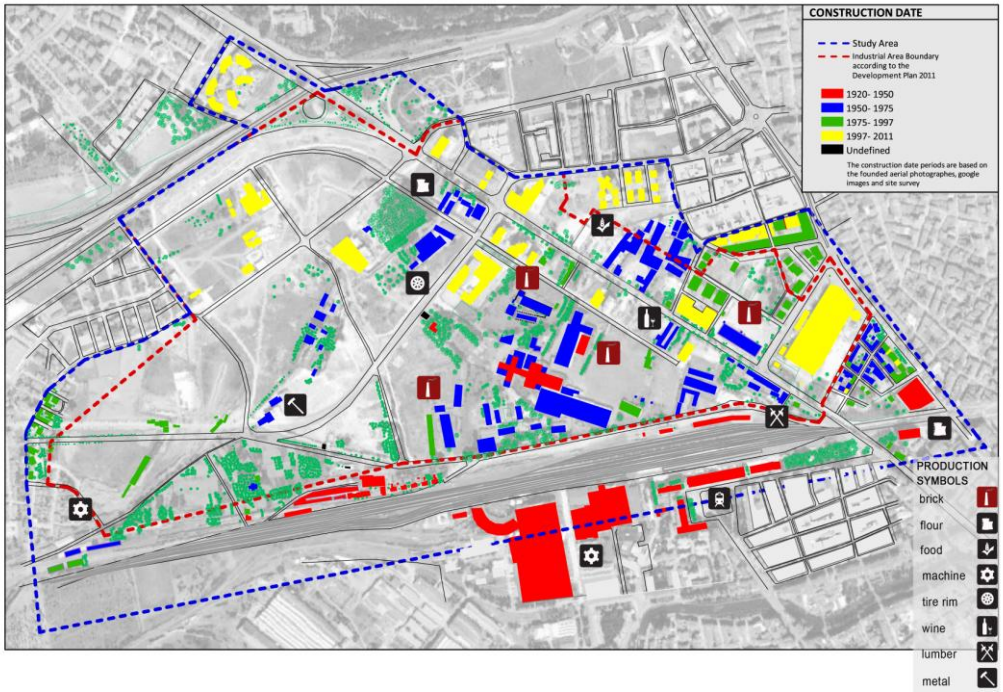


Figure 48: The Construction Date of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

The construction date of the industrial structures are generally between1950 and1975; altough the establishment of the factories are dated to 1923- 1950. This situation is due to the improvement of the production technology that cause changes in the industrial areas. And the new buildings are started after 1997; with the demolishment of the industrial structures. Particularly on the periphery of the site, the historic residential units were demolished to construct new buildings.

The conservation status of the industrial buildings is analysed. The division is made according to the components the factories have. These are design, construction technique, material, mechanical component, landscape elements and site boundaries. According to that Kılıçoğlu Factory conserves its components. Other factories except Kurt Factory possess construction technique and material. Kurt Factory was not conserved and transformed into the shopping mall. However, smokestacks and mechanical units were constructed in their place symbolically.

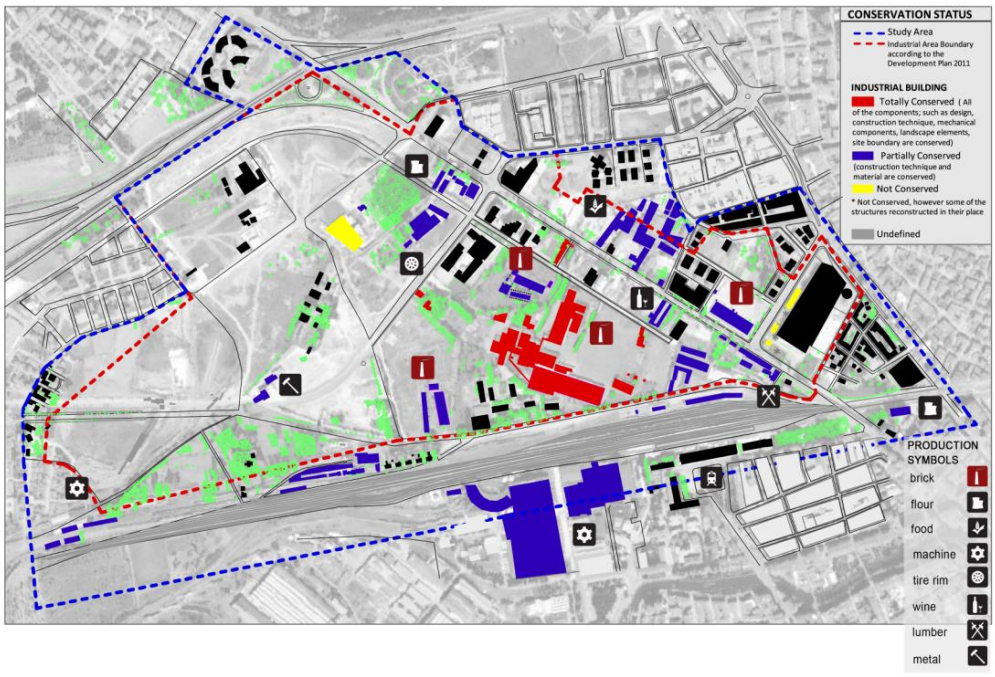


Figure 49: The Condition of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

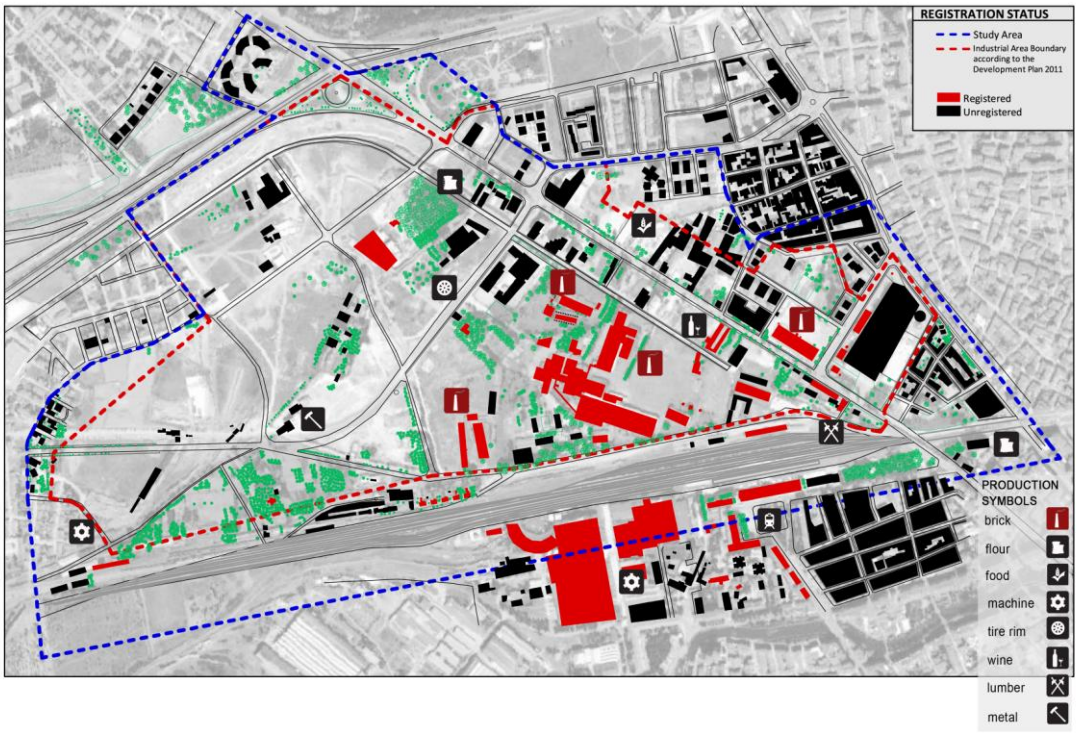


Figure 50: The Registration Status of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

The industrial buildings, which are registered according to the 2011 Development plan are Kılıçoğlu Tile and Brick Factory, Kartal Tile and Brick Factory, Çift Kurt Tile and Brick Factory, The Aral Wine Factory (Hayal Kahvesi), The Lumber Factory (222 Recreation Centre), The Train Station Building, Haller Youth Centre (Haller Gençlik Merkezi), Turkish Grain Board (Toprak Mahsülleri Ofisi).

3.2.3. The Brick and Tile Factories

The brick and tile factories which were established as a group in Early Republic are located in the factory district. Today, there are five brick and tile factories still remaining which are the example of the first period of Turkish Republic; Kılıçoğlu Tile and Brick Factory (1926), Kurt Tile Factory (1928), Çiftkurt Tile Factory (1933), Kartal Tile Factory (1944), Doğan Tile Factory (1948). However, the condition of the factories is different from each other. The Kılıçoğlu Tile Factory conserves its structures, industrial components and is used as warehouse. The Çift Kurt Tile Factory is in good condition, but only the furnace building can be seen and it is vacant. The Kartal and Doğan Tile Factories are partially collapsed and not inuse. On the site of the Kurt Tile Factory, the complex was demolished in 1997 and the Espark Shopping Mall was constructed. Some buildings near Shopping Mall and smoke

stacks were reconstructed.

In this part, the brick and tile factories in the area are defined separately with the inventories.[125]

3.2.3.1. Kılıçoğlu Brick and Tile Factory

The area is surrounded by commercial units and Hayal Kahvesi on the South, by Doğan Tile Factory on the West, by the TCDD complex on the North and by the storages of Soil Product Office (TMO) East. The structures were registered in 14.08.2003/ 2479 by the Cultural and Natural Heritage Preservation Board. The owner of the site is Aydemir Family.[126]

Figure 51: The Kılıçoğlu Factory (İl Yıllığı Hazırlama Komitesi, 1973)

In 1927, Aslan Tile Factory was established by Bulgar Çirkof Kardeşler. In 1949, the factory was obtained by Kurt Sait and its name was changed to Kılıçoğlu Tile and Brick Factory. Between 1927- 1950; the complex contains factory building 1[127], 6 Bulgarian Kilns, a drying unit and 2 smoke stacks. In 1952, the factory 2 was constructed. Between 1950- 1975, the Bulgarian Kilns were demolished and factory building 3[128] , administration unit, vehicle maintenance atelier were built. After 1980, carpenter shop and storage building was added to the complex.[129]

[125] The methodology on the study was defined in the chapter 1.
[126] The location of the factory was shown in the environmental characteristics in inventory no: 4, p.1
[127] The building was constructed by Robert Aebi and Cieag (ZiegeletechnBureau)
[128] The factory was constructed by Aydın Boysan
Aydın Boysan (17 June 1921), who was born in İstanbul, is an architect, writer and journalist. He was graduated from the Mimar Sinan University of Fine Arts in 1945. He was one of the founder of the Turkish Chamber of Architects, the Member of the Board, the first Secretary General and the İstanbul Department Manager. Between 1957- 1972, he gave lectures in İstanbul Technical University. He established Bas Publication(1984-1993). He wrote columns in newspapers.
The Pertevniyal High School Portal, “Aydın Boysan”, *http://www.pl1872.com/tag/aydin-boysan-kimdir,* accessed on March 20, 2012
[129] The transformation process based on 1950 and 1975 maps are indicated in the inventory no: 4, p.6

Figure 52: The structures of the Doğan Factory (*http://www.eskisehir.gov.tr/,* accessed on 10 April, 2010)

The factory building 1 (1947-1973) consists of the rectangular formed structure lies east-west direction and other structures are united to it. The structure begins with the two strorey height silo building which the clay is stored. Starting with the silo from west to east, the building consists of the linear rowed spaces and mechanical equipments which are formed by the production process. These are silo, water tower, mechanical unit, chamber and zigzag kiln. The east elevation is two storey height, combination of the concrete and brick masonry construction systems. 10 square formed coloumns arranged in a linear order, over the coloumns a thin capital and a beam and eave which indicates the characteristics of an architrave. In side the elevation, there are projected architectural elements with framed borders on the wall. In the middle the door is opened late periods. Due to the damp problem, there is colour change on the roof and eave. On the North Elevation, the modular order of the rectangular architectural elements.

The rectangular formed **factory building 2** (1947-1952) is located on the entrance way of the parcel and lies north-south direction and other structures are united to it. From north to south, the building consists of the linear rowed spaces; silo, brick and cotta production, chamber and zigzag kiln, keller drying units. On the east side, the seperated buildings are drying units and silo. Except the preparation unit all the structures are three storey height. The buildings are constructed by brick masonry with gable roof. The factory 1 and 2 buildings are connected by a "L" formed structure, which have production line inside, elevated over concrete coloumns. The mass is constructed by concrete system with brick infill and have square formed windows.

The **factory building 3** (1973) is located parallel to the factory 1. The structure is two storey height (9m) and constructed with concrete prefabricate system with brick infill. The factory consists of mezzanine floors in an one space with three production parts and over them, the area is used as office. The presses, initial and main drying units are seen.

The **smokestacks** become narrow on the high levels and constructed by brick masonry with the metal steps. The smokestack 2 is demolished up to the low level. The smokestack 1 is remained and 30 m height. The top of the stack has finishing ring which is projected. There is a crack over the smokestack 1. The **administration unit** is on the courtyard of the Factory 1. The water tank is under the ground level and the mechanism on the North elevation control the water level. The structure is 20m height. The corners and three semi circle arches on the elevation are formed by the plaster and ended by a slopped parapet. The rectangular formed **storage** building is 7m height and on the east and west elevations, there are sliding doors. The structure is constructed by concrete system with brick infill. The corrugated sheet is used over the metal roof system. There are square windows over the south and north elevation. The building has maintenance problems; the metals are rusted and the opening materials are destroyed. The **Vehicle Maintenance Atelier** consists of three units; two of them are maintenance atelier and one of them is office. The building is one storey height and on the basement level stone masonry, over it with gable roof. The timber suspended roof is used. The **carpenter shop** consists of two units, constructed by brick masonry and covered by cement. The roof is gable. The entrance unit is used as carpenter shop and other unit is as an office.

Table 4: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

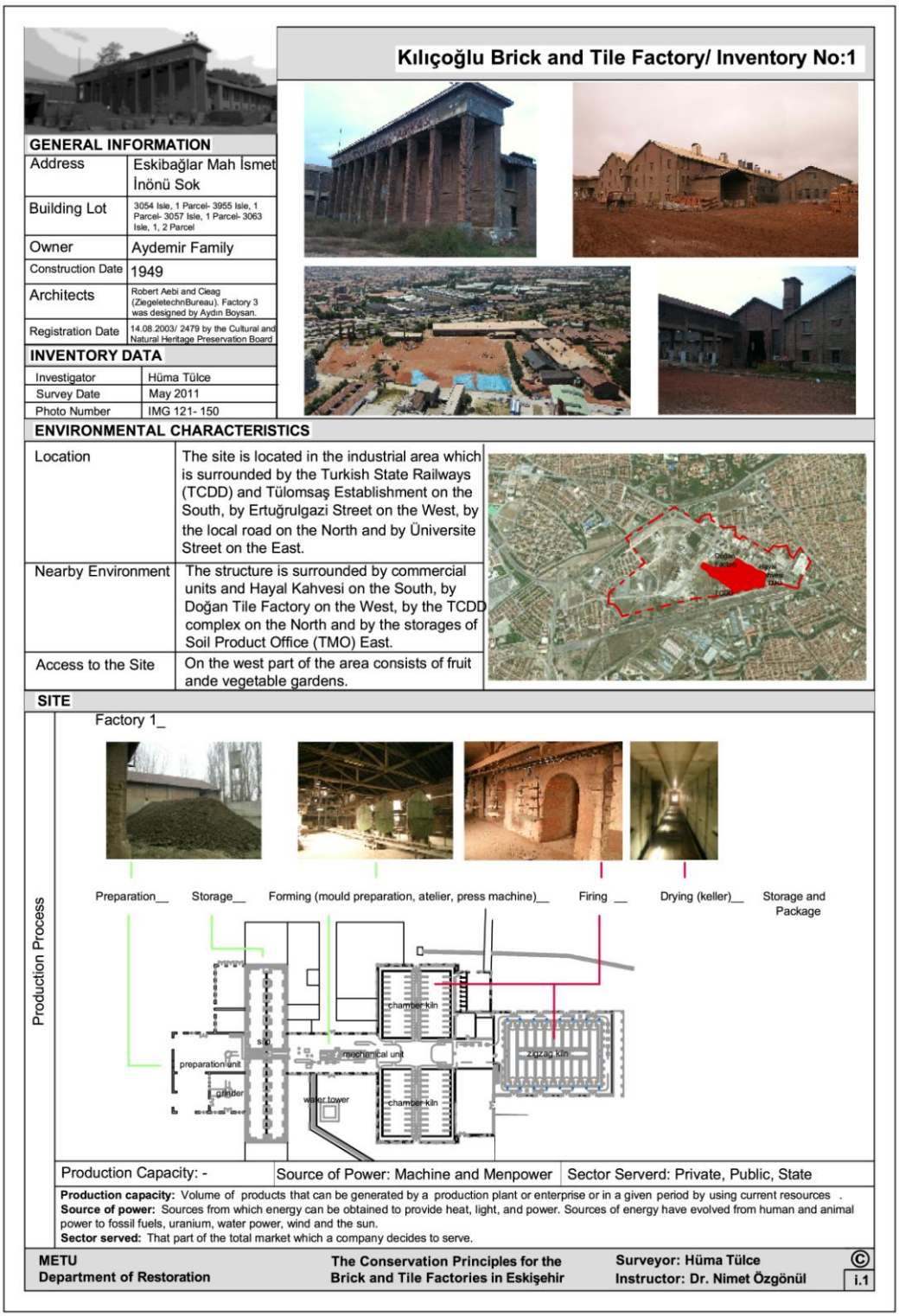
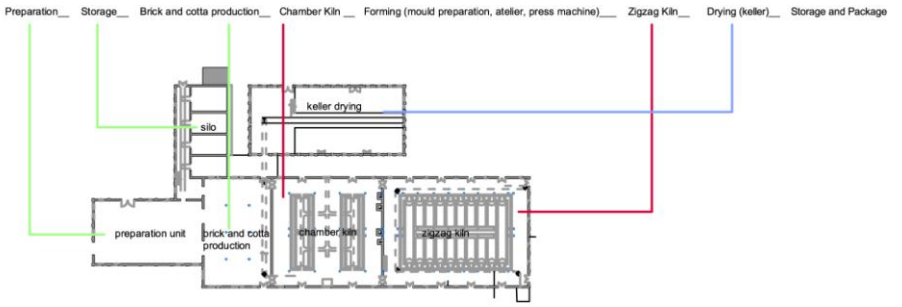


Table 5: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

Factory 2_



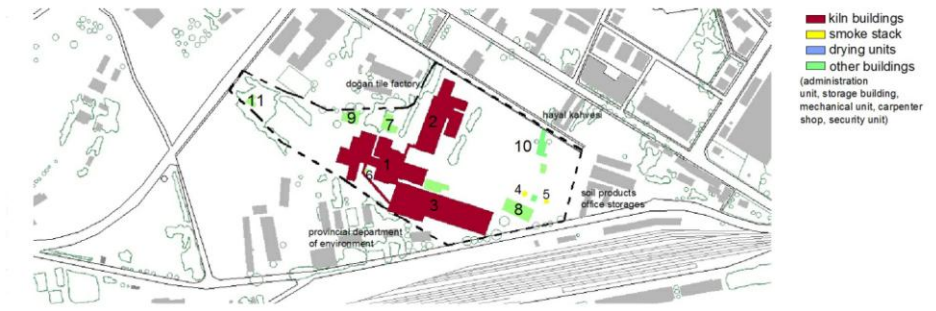
Site Components

Open Area

Buildings	No	Original Function	Current Function	Period	Construction System & Material	Condition
	1	Factory 1	Vacant	1947-73	Reinforced concrete sytem and brick masonry The gable roof with marseilles tile	Good
	2	Factory 2	Vacant	1947-52	Brick masonry The gable roof with marseilles tile	Good
	3	Factory 3	Vacant	1974	Reinforced concrete sytem and brick infill	Good
	4	Smoke Stack 1	—	1950	Brick masonry	Good
	5	Smoke Stack 2	—	1950	Brick masonry	Destroyed
	6	Water Tower	—	1950	Brick masonry	Good
	7	Administration Unit	Vacant	1970's	Ground floor stone masonry and first floor brick masonry The hipped roof	Good
	8	Storage Building	Vacant	1980's	Reinforced concrete sytem and brick infill The gable roof	Partially Destroyed
	9	Vehicle Maintenance Atelier	Vacant	1970's	Brick masonry	Good
	10	Carpenter Shop	Vacant	1980's	Brick masonry	Good
	11	Mansion	Vacant	1947-48		Good

Mechanical Equipment	No	Function	Material	Condition
	1	Production Line	Metal	Good
	2	Machinery of mould preparation	Metal	Good
	3	Extruding Machine (pres)	Metal	Good
	4	Conveyor	Metal	Good
	5	Keller drying	Metal	Good

Notes: Factory 1 and 2 buildings are connected together by a elevated structure which provides the transition of the raw material.



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Instructor: Dr. Nimet Özgönül

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Table 6: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

Feature of the Structure			
	1-Factory Building 1	The building consists of the rectangular formed structure lies east-west direction and other structures are united to it. The structure begins with the two strorey height silo building which the clay is stored. Starting with the silo from west to east, the building consists of the linear rowed spaces and mechanical equipments which are formed by the production process. These are silo, water tower, mechanical unit, chamber and zigzag kiln. The east elevation is two storey height, combination of the concrete and brick masonry construction systems. 10 square formed coloumns arranged in a linear order, over the coloumns a thin capital and an a beam and eave which indicates the characteristics of an architrave. In side the elevation, there are projected architectural elements with framed borders on the wall. In the middle the door is opened late periods. Due to the damp problem, there is colour change on the roof and eave. On the North Elevation, the modular order of the rectangular architectural elements.	 
	2-Factory Building 2	The rectangular formed building is located on the entrance way of the lot and lies north-south direction and other structures are united to it. From north to south, the building consists of the linear rowed spaces; silo, brick and cotta production, chamber and zigzag kiln, keller drying units. On the east side, the seperated buildings are drying units and silo. Except the preparation unit all the structures are three storey height. The buildings are constructed by brick masonry with gable roof. The factory 1 and 2 buildings are connected by a "L" formed structure, which have production line inside, elevated over concrete coloumns. The mass is constructed by concrete system with brick infill and have square formed windows.	
	3-Factory Building 3	The factory is located parallel to the factory 1. The structure is two storey height (9m) and constructed with concrete prefabricate system with brick infill. The factory consists of mezzanine floors in an one space with three production parts and over them, the area is used as office. The presses, initial and main drying units are seen.	
	4,5-Smokestack 1,2	The smokestacks become narrow on the high levels and constructed by brick masonry with the metal steps. The smokestack 2 is demolished up to the low level. The smokestack 1 is remained and 30 m height. The top of the stack has finishing ring which is projected. There is a crack over the smokestack 1.	
	6-Water Tower	The structure is on the courtyard of the Factory 1. The water tank is under the ground level and the mechanism on the North elevation control the water level. The structure is 20m height. The corners and three semi circle arches on the elevation are formed by the plaster and ended by a slopped parapet.	
	7-Administration Unit	The square formed building is elevated by a basement floor. The access to the building is obtained by the stairs on the south and east.The basement is stone masonry and ground floor is brick masonry with hipped roof. On the south elevation, there are two coloumns. On the south and east elevation, there are square windows. Another building in rectangular form is added to the building and used as offices connected to the administration unit by a stair.	
	8-Storage Building	The rectangular formed building is 7m height and on the east and west elevations, there are sliding doors. The sturture is constructed by concrete system with brick infill. The corrugated sheet is used over the metal roof system. There are square windows over the south and north elevation. The buildinhg has maintenance problems; the metals are rusted and the opening materials are destoyed.	
	9-Vehicle Maintenance Atelier	The building consists of three units; two of them are maintenance atelier and one of them is office. The building is one storey height and on the basemenet level stone masonry and over brick masonry with gable roof. The timber suspended roof is used.	
	10-Carpenter Shop	The building consists of two units, constructed by brick masonry and covered by cement. The roof is gable. The entrance unit is used as carpenter shop and other unit is office.	

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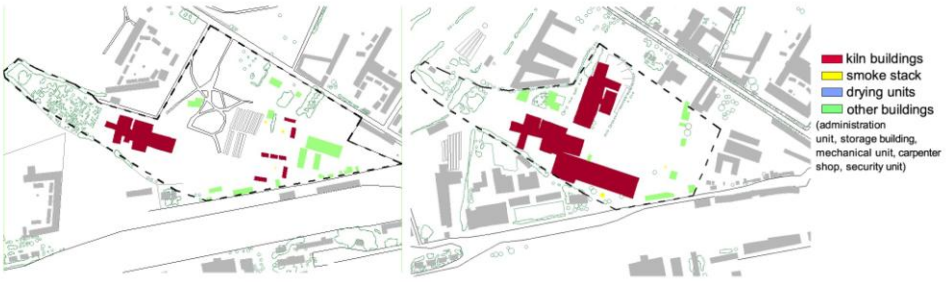
Table 7: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

HISTORY

Site History	In 1927, Aslan Tile Factory was established by Bulgar Çirkof Kardeşler. In 1949, the factory was obtained by Kurt Sait and its name was changed to Kılıçoğlu Tile and Brick Factory. Between 1927- 1950; the complex contains factory building 1, 6 Bulgarian Kilns, a drying unit and 2 smoke stacks. In 1952, the factory 2 was constructed. Between 1950- 1975, the Bulgarian Kilns were demolished and factory building 3, administration unit, vehicle maintenance atelier were built. After 1980, carpenter shop and storage building was added to the complex.

1950 1975



SIGNIFICANCE OF THE SITE

Instrinsic Values	~~Age~~ ~~Historical~~ ~~Technical/ Artistic~~ ~~Document~~ ~~Originality~~ ~~Construction and Material~~ ~~Mechanical Component~~
Extrinsic Values	~~Aesthetic~~ ~~Sociocultural~~ ~~Political~~ ~~Symbolic~~ ~~Educational~~ ~~Identity~~ ~~Group~~ ~~Rarity~~
Economic Values	~~Use/ Functional~~ ~~Market~~

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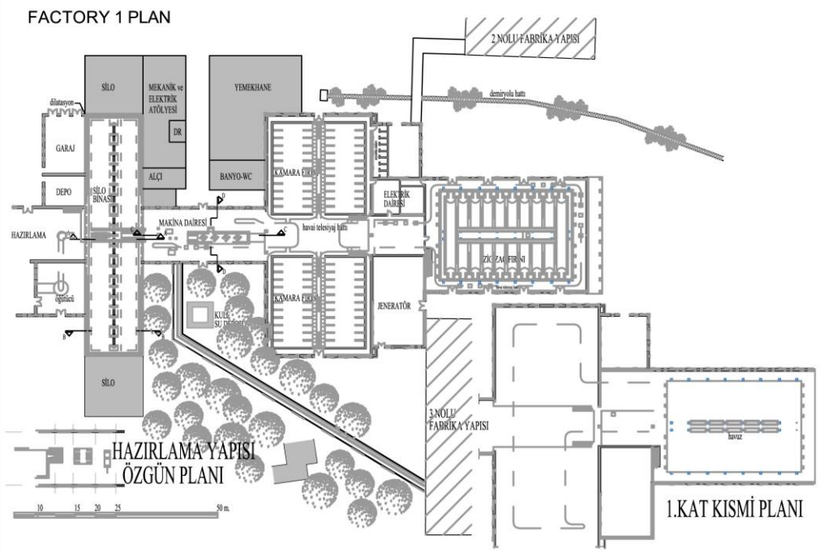
Table 8: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

PLAN/ SECTION/ ELEVATION



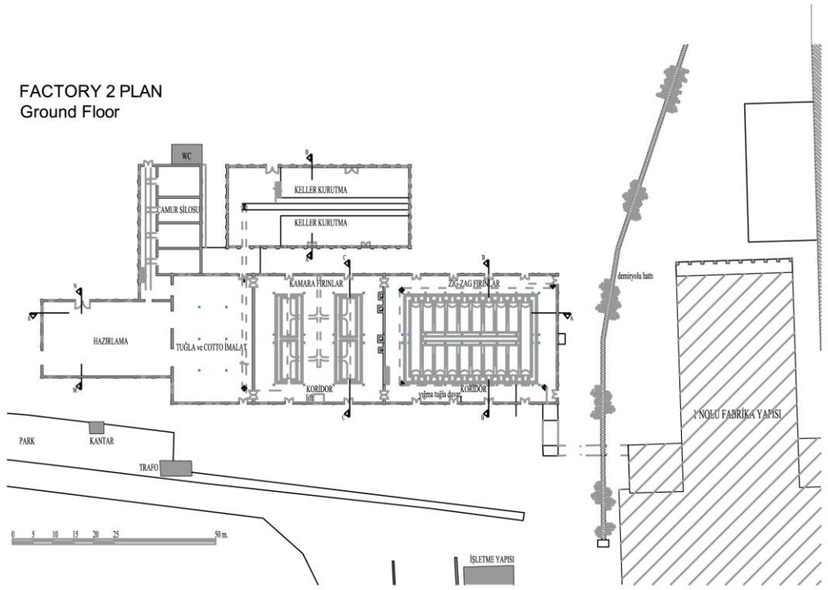


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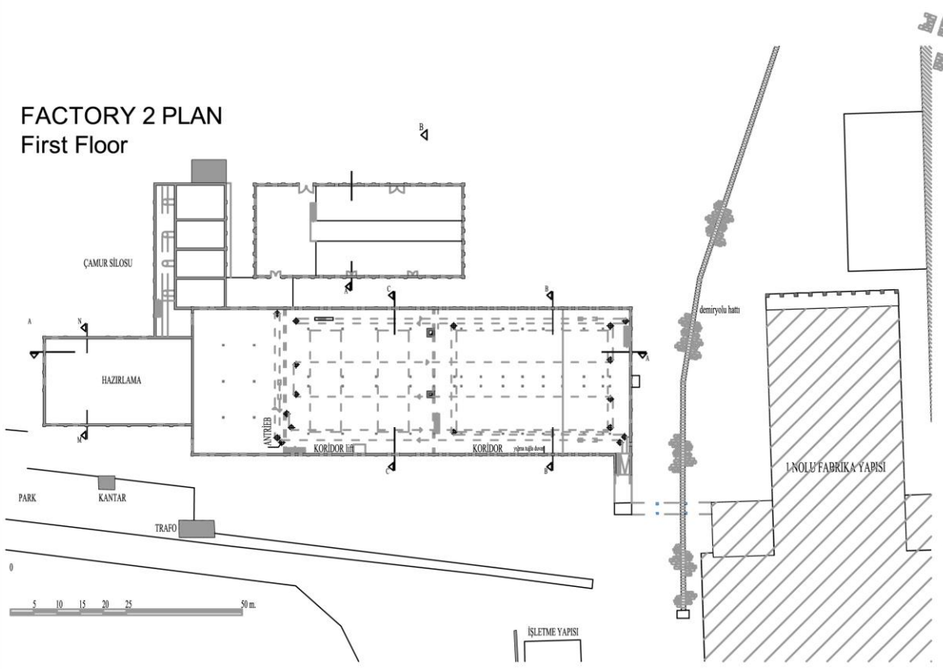
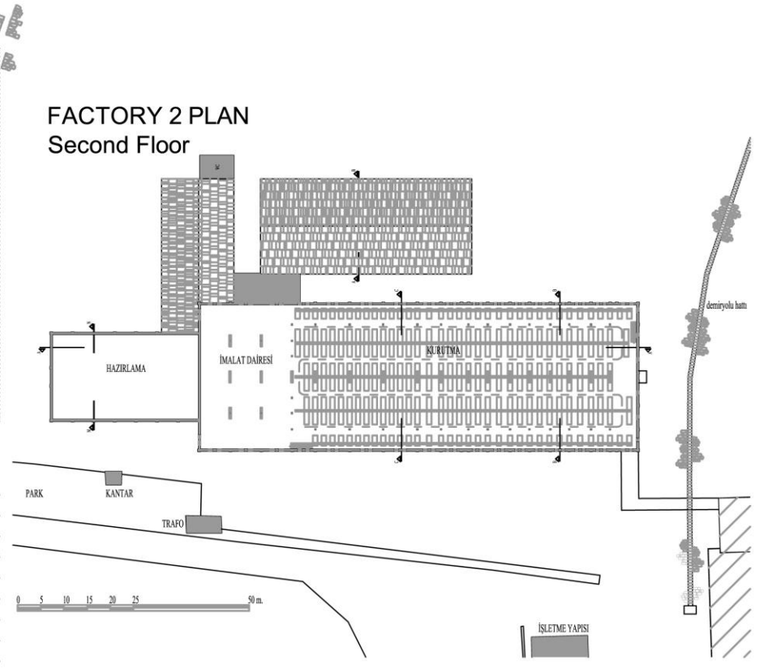
Table 9: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

PLAN/ SECTION/ ELEVATION





- Nalbant, K., The plan, sections and elevations of the complex, Miyar Mimarlık, Ankara

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Table 10: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

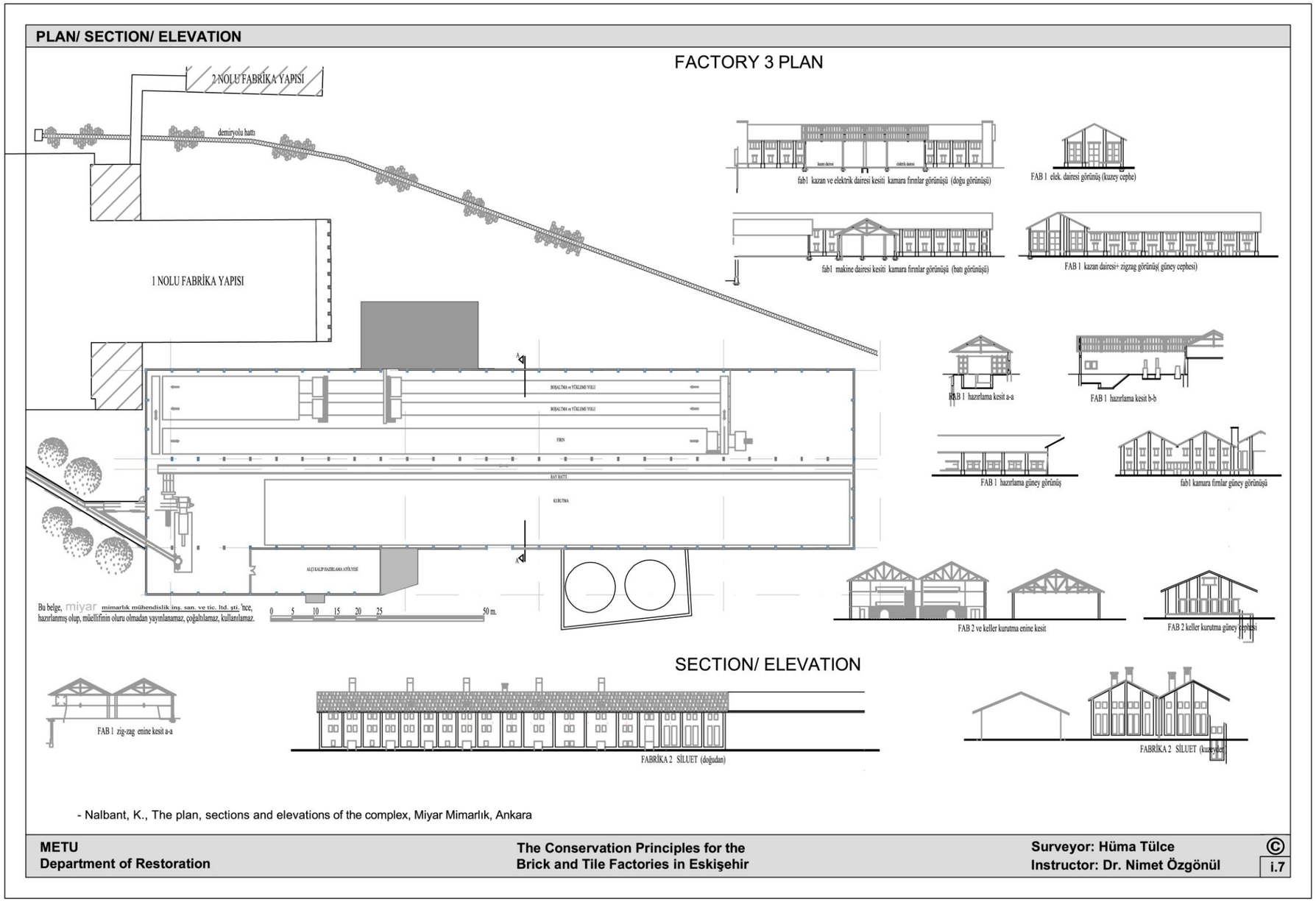


Table 11: The inventory No:1 for Kılıçoğlu Brick and Tile Factory

THE CONSERVATION, MAINTENANCE AND REGENARATION PROJECT PROPOSAL by MİYAR ARCHITECTURE

In the content of the project; firstly the location, site, research and documentation of the factories are defined. Secondly the historical analysis of the structures, legal regulations and current condition are determined. In the evolution; the values, problems, potentials are represented. The problems are analyzed in two scales as areal/ parcel and building scale. In the end; conservation, transformation and regeneration proposal are made. This section consists of principles and conservation approaches and relation with the final development plan with the aim of the projects.

During the research and documentation, for production of the concept projects ; the architectural drawings were produced. This study is planned by two methods; the control and update the historic drawings and measurement of the structures in 1/100 scale. Then all of the structures with mechanical equipments were defined.

The aim of the projects were summarized as the structures that lost their functions were integrated with the new buildings to service to the city.

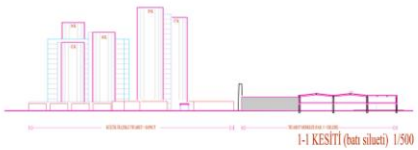
The aims are;

- Conservation with sustainability
- The reuse with modern functions
- The integrity of the area is obtained by the removal of the in appropriate additions, materials and installments.
- The interventions for physical deteriorations
- The interventions with the compatible materials and construction technics.

The area was designed for multifunctional purposes as the student dormitories and commercial uses . The structures that lost their original function are conserved with new uses except the structures built after 1970. The narrow gauge railway and landscape elements are conserved. The landscape is strengthened by the squares and pedestrian axes . In the regeneration the cultural heritage is considered as focal points.

The factory 1 is decided to be transformed into a cultural complex by the presentation of the south part of the chamber kilns, mechanical unit, the east part of the zig zag kilns. For the factory 2, the additions on the east side is removed and reused as student residences. The other parts of the structure is functioned as cinema and selling units. The water tower is realizes as a land mark and a view terrace can be designed on the upper levels.
For the new design areas; a commercial centre, residence, sport complex, boutique hotel, recreational areas are planned. The decisions for the new structuring tried to be formed according to the the development plans.

In the end, all of the projects were preliminary studies resulted by the analysis of the potentials. The studies aimed to provide principles that will be the base for the projects in detail.



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3.2.3.2. Çift Kurt Brick and Tile Factory

The area is surrounded by new buildings such as Eldem Residence on the West, by residential, commercial units on the North, Espark Shopping Mall on the East and industrial complexes on the South.[130] The site of the factory is in central position and close to the other transformed industrial complexes such as Aral Wine Factory (Hayal Kahvesi), Lumber Factory (222 Recreation Centre)…

The structures in the area are registered in 20.11.1995/ 28 by the Cultural and Natural Heritage Preservation Board. The factory contains private landownership and the ownership status from construction to today was indicated below figure;

Figure 53: The origin of the Çift Kurt Factory (obtained by the archive of the factory)

The Çift Kurt Tile Factory was constructed in 1933 by Kurt Sait who is one of the partners of Kurt Tile Factory before. Beginning from the establishment of the factory, the factory passed through transformations. The components of the complex were 11 Bulgarian Kilns, a drying unit, mechanical unit and 3 smokestacks. Between 1933-1950, a new Bulgarian Kiln and drying unit were constructed in addition to the complex. After 1957, the change in technology cause a new kiln typology to construct. So the six of the Bulgarian Kilns were demolished to build a hoffman kiln. In 1992, the structures were the hoffman kiln, a smokestack, a air ventilation stack and a well; however the drying units, bulgarian kilns, mechanical unit were demolished. Due to the increase in land values, the parcels began to be divided in 1996. The parcel on the South part were splited into sport area and residential buildings. In 2003, the Eldem Residence and commercial units under the residence, residential buildings on the West part of the site were seperated.[131]

[130] The location of the factory was shown in the environmental characteristics in inventory no: 1, p1
[131] The transformation process based on 1950 and 1975 maps are indicated in the inventory no: 1, p5

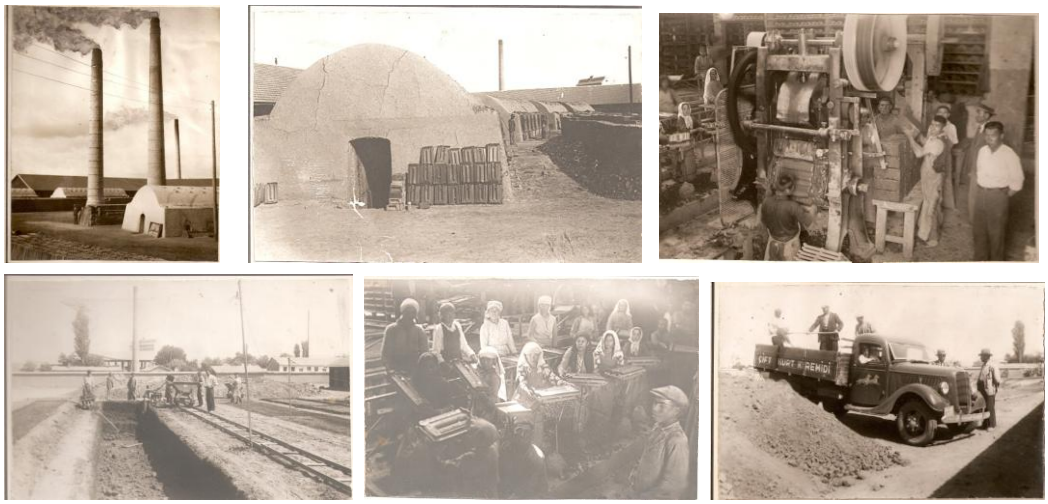


Figure 54: The Çift Kurt Factory in 1945 (obtained by the archive of the factory)

At the present, the complex consists of kiln building, smokestack, well and security unit. These buildings are defined in detailed according to their plan scheme, facade organization, architectural elements, materials and structural condition.

The vaulted kiln building was constructed in concrete system in 1957. The plan of the building consists of seven longitunidal axes.[132] The external axes were used for drying units and has timber frame pent roof with marseilles tiles. The double hoffman kiln plan, which was defined in the Appendix A, was seen; so in the core of the structure, two chamber tunnel in each side were constructed. There are 12 chambers in the kiln and the access to the chambers are obtained by arched openings. Between the chambers the hot air flue tunnel was planned which was connected to the smokestock by air flues. The vault of the structure was constructed by brick material and between them the concrete bearings were used. The kiln area was repaired, however the interventions were not done for the drying units. The structure has maintenance problems.

[132] The plans, sections and elevations can be seen in the inventory no: 1, p. 4,5

Figure 55: The kiln building of the Çift Kurt Factory (author, 2011)

The production process of the hoffman factory consists of preparation of the soil, grinding, forming, drying, firing& cooling and storage.[133] The production capacity when it is in use is 2.5 milion goods in a year. The power source is machine and menpower and served to the public, private and state sectors.

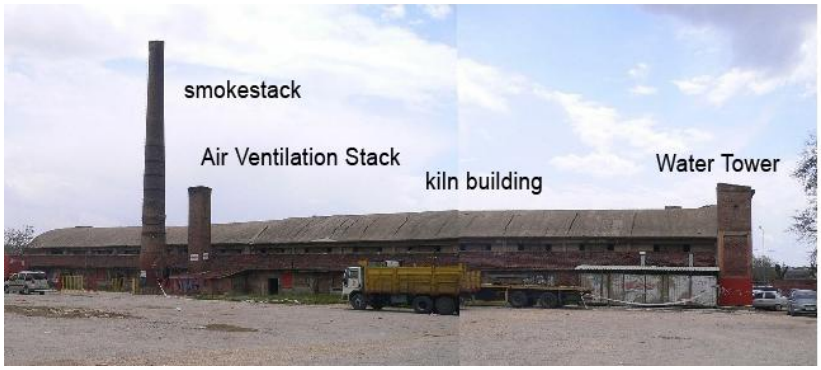


Figure 56: The structures of the Çift Kurt Factory (author, 2011)

The cylindrical formed **smokestack** was constructed by brick in 1957. The connection to the building by flues for air ventilation is obtained. The smokestack has cracks and dampness problem. The square formed **air ventilation stack** was constructed by brick to fasten the air ventilation of the kiln building. Same as the smokestack it has maintenance problems. The water tower was constructed in square form by brick and has pent roof with marseilles tiles. The **security unit** was brick masonry and the roof was pent roof with marseilles tile. The maintenance of the building was done that caused to lost its authentic features if existed. The mechanical equipments (vals machines, mud machines, presses...) were moved to the new Çift Kurt Factory which was on the Sarıcakaya Street.

[133] The production process is defined in detail in 3.2.1.

Table 12: The inventory No:2 for Çift Kurt Brick and Tile Factory

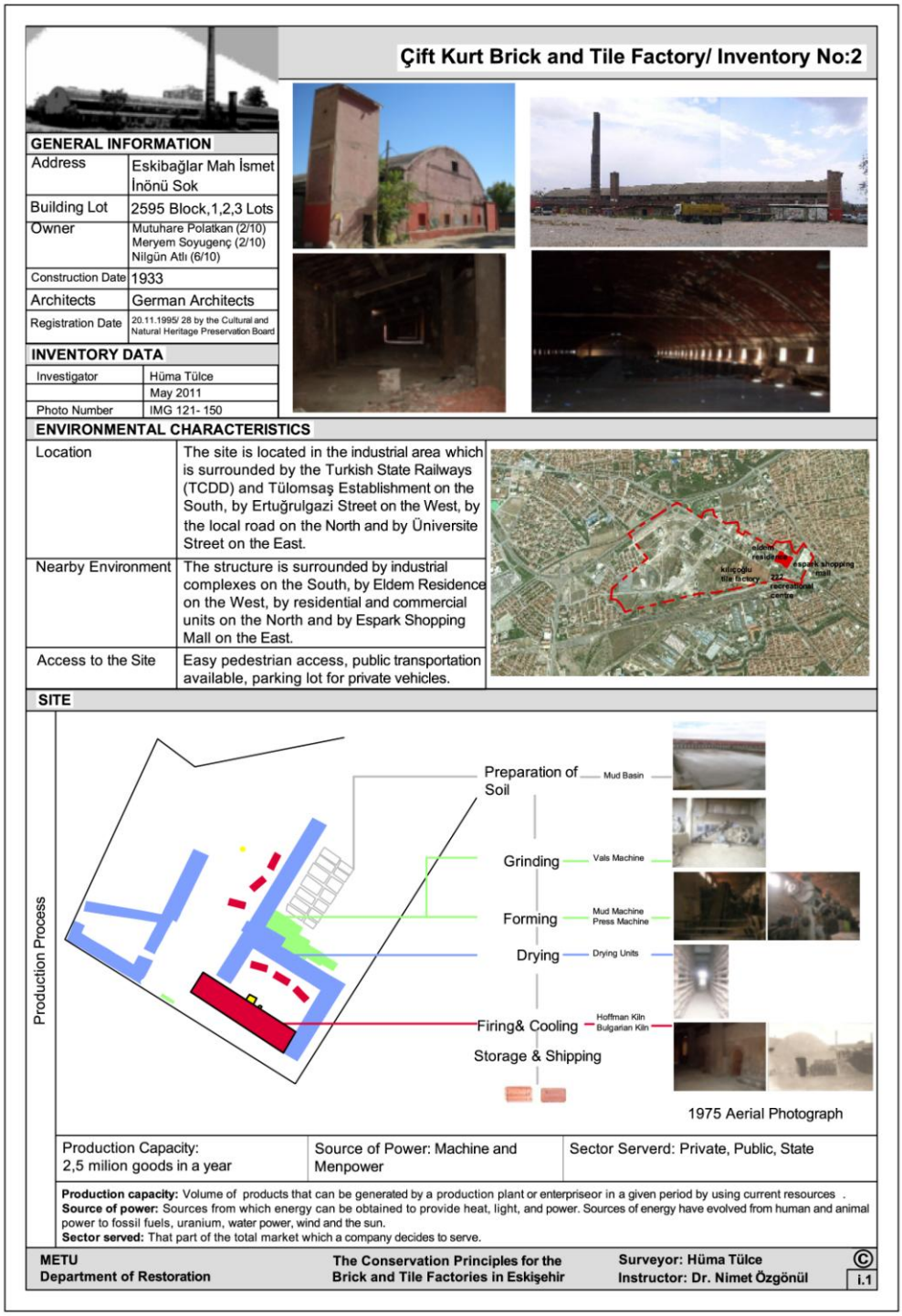
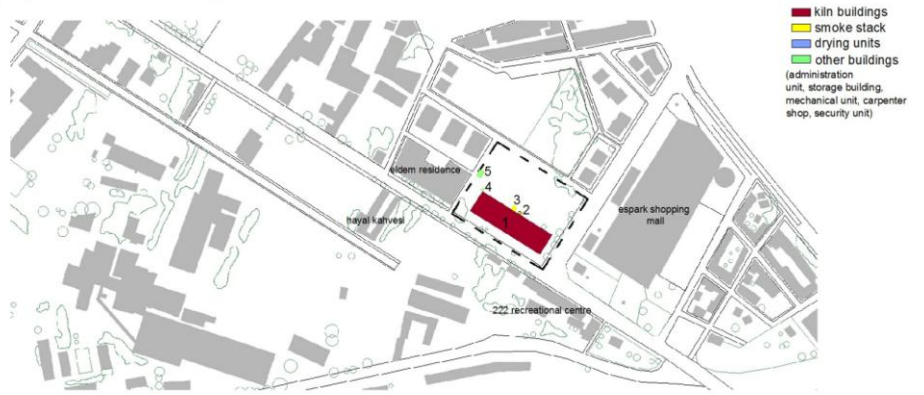


Table 13: The inventory No:2 for Çift Kurt Brick and Tile Factory

Site Components

Open Area	No landscape element.						
Buildings	No	Original Function	Current Function	Period	Construction System & Material	Condition
	1	Kiln Building	Vacant	1957	Concrete system, brick infill Brick vault	Good
	2	Smokestack	—	1957	Brick masonry	Good
	3	Air Ventilation Stack	—	1957	Brick masonry	Good
	4	Water Tower	—	1957	Brick masonry	Good
	5	Security Unit	Vacant	1975-92	Brick masonry Shed roof with marseilles tile	Good
Mechanical Equipment	The mechanical equipments (vals machines, mud machines, presses...) were moved to the new Çift Kurt Factory.					



Feature of the Structure

1-Kiln Building	The vaulted structure was constructed in concrete system. The plan of the building consists of seven longitunidal axes. The external axes were used for drying units and has timber frame pent roof with marseilles tiles. The double hoffman kiln plan was seen; so in the core of the structure, two chamber tunnel in each side were constructed. There are 12 chambers in the kiln and the access to the chambers are obtained by arched openings. Between the chambers the hot air flue tunnel was planned which was connected to the smokestock by air flues. The vault of the structure was constructed by brick material and between them the concrete bearings were used. The kiln area was repaired, however the interventions weren't done for the drying units. The structure has maintenance problems.	 
2-Smokestack	The cylindirical formed smokestack was constructed by brick and connected to the building by flues for air ventilation.	
3-Air ventilation Stack	The square formed air ventilation stack was constructed by brick to fasten the air ventilation of the kiln building.	
4-Water Tower	The square formed water tower was constructed by brick and has pent roof with marseilles tiles.	
4-Security Unit	The building was brick masonry and the roof was pent roof with marseilles tile. The maintenance of the building was done.	

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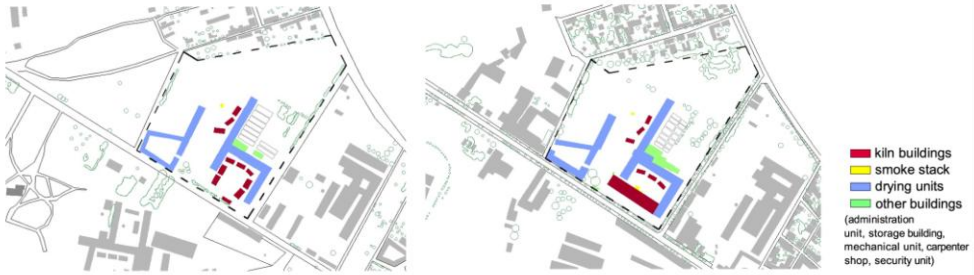
Table 14: The inventory No:2 for Çift Kurt Brick and Tile Factory

HISTORY of SITE

Site History	In 1933, the factory was constructed by Kurt Sait. The components of the complex were 11 Bulgarian Kilns, a drying unit, mechanical unit and 3 smokestacks. Between 1933-1950, a new Bulgarian Kiln and drying unit were constructed in addition to the complex. In 1957, six of the Bulgarian Kilns were demolished and the Hoffman Kiln was constructed. In 1992, the structures were the hoffman kiln, a smokestack, a air ventilation stack and a well; however the drying units, bulgarian kilns, mechanical unit were demolished. In 1996, the parcel of the site was divided into 4 and on the South part sport area and residential buildings were splited. In 2003, the Eldem Residence and commercial units under the residence, residential buildings on the West part of the site were seperated in 2003.

1950 1975



SIGNIFICANCE OF THE SITE

Instrinsic Values	~~Age~~ ~~Historical~~ ~~Technical/ Artistic~~ ~~Document~~ ~~Originality~~ ~~Construction and Material~~ Mechanical Component
Extrinsic Values	Aesthetic ~~Sociocultural~~ Political ~~Symbolic~~ ~~Educational~~ ~~Identity~~ ~~Group~~ ~~Rarity~~
Economic Values	~~Use/ Functional~~ ~~Market~~

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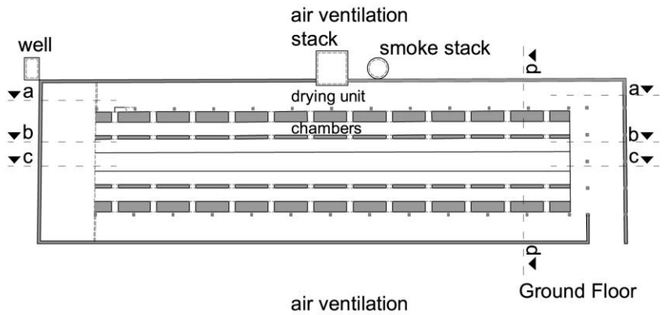
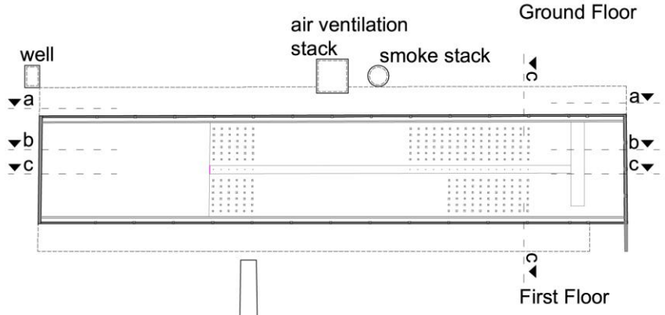
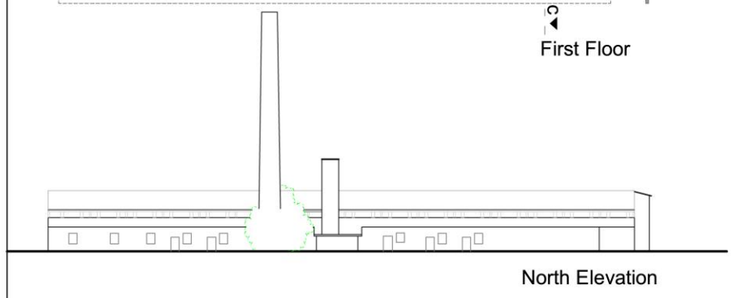
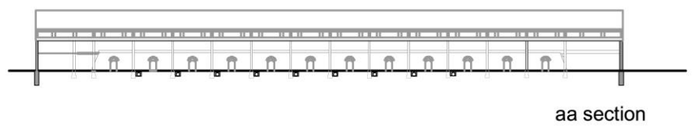
Table 15: The inventory No:2 for Çift Kurt Brick and Tile Factory

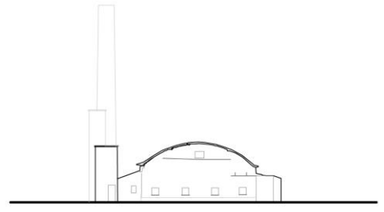
PLAN/ SECTION/ ELEVATION

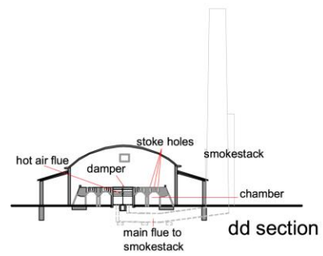


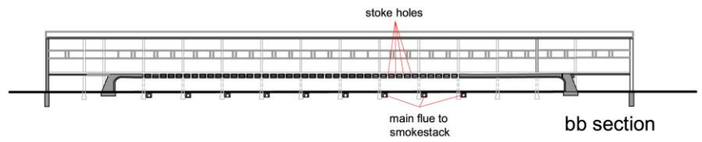












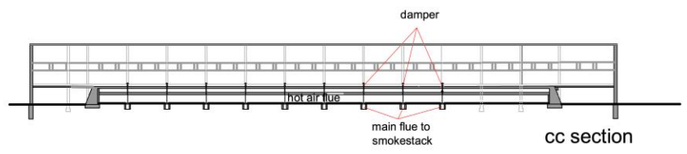


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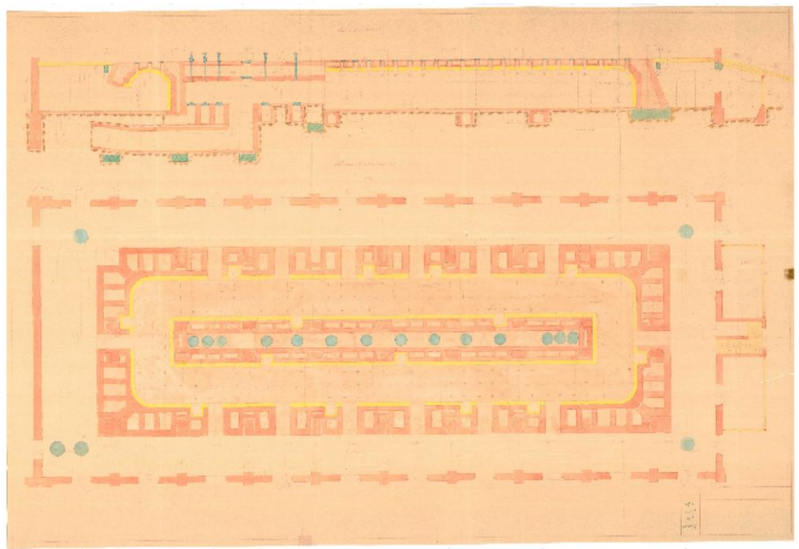
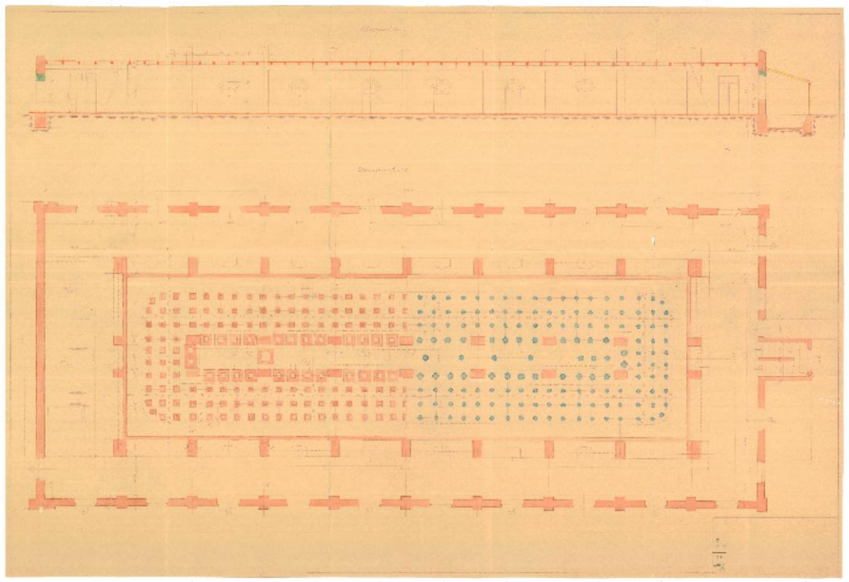
Table 16: The inventory No:2 for Çift Kurt Brick and Tile Factory

PROJECT (plan/ section/ elevation)



Ground plan



First, second floor plan

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3.2.3.3. Doğan Brick and Tile Factory

The structure is surrounded by Kılıçoğlu Tile and Brick Factory on the South and East, by residential and commercial units on the North and by Tepebaşı Municipality on the West.[134] The perception of the area is prevented by the residential buildings built on the North side of the area and the access is obtained by a side road. The area was registered in 14. 08. 2003/ 2479 by the Cultural and Natural Heritage Preservation Board

The factory was constructed by German Architects in 1940. In 1950, the components of the complex were 10 Bulgarian Kilns, two drying units and 2 smoke stacks. According to the 1975 aerial photograph; all of the Bulgarian Kilns were demolished and two chamber kiln buildings were constructed; with the result of the development of the industrial technology. Today, two kiln buildings, two smoke stack, partially storage building and drying unit can be seen; however, two of the drying units were demolished. In 27.07.2011, the removal decision against the unauthorized use of the site by the container of a taxi stand was taken.[135]

Figure 57: The aerial view of the Doğan Factory between 1950 and 1975 (Eskişehir Tepebaşı Municipality)

The components of the area are two kiln buildings, two smoke stack, partially storage building and drying unit . All of the structures that survive today were dated to between 1950 and 1975 according to the aerial photographs.

The ground floor of **the kiln building 1 and 2** was constructed by stone masonry and first floor by concrete system with brick infill. The roof of the kiln 1 is gable roof with marseilles tile and some part of the roof was demolished. The plan of the building consists of five

[134] The location of the factory was shown in the environmental characteristics in inventory no: 2, p1
[135] The transformation process based on 1950 and 1975 maps are indicated in the inventory no: 2, p.4

longitudinal axes. The external axes were used for drying units. The chamber kiln plan was seen and there are 12 chambers in the kiln and the access to the chambers are obtained by arched openings.[136] Between the chambers the hot air flue tunnel was planned which was connected to the smokestack by air flues. Some of the external walls are destroyed. Due to the partially demolishment of the roof, the structure has been exposed to the physical deteriorations. The roof of the kiln 2 is totally demolished. The plan of the building consists of five longitudinal axes. The external axes were used for drying units. The chamber kiln plan was seen and there are 8 chambers in the kiln and the system is same as the kiln building 1. The infill of the external walls were destroyed. The basement of the **drying unit** was constructed by concrete system and the ground floor by brick masonry. The **storage building** was constructed by brick masonry. The roof and some parts of the drying unit and storage building are demolished and the plan scheme isn't totally legible. The cylindrical and rectangular formed **smokestacks** were constructed by brick and connected to the building by flues for air ventilation. The **security unit** was constructed by brick masonry with gable roof made on marseilles tile and dated after 1975 according to the aerial photographs. The roof and some parts of exterior walls are demolished.

Figure 58: The structures of the Doğan Factory (*http://www.eskisehir.gov.tr/,* accessed on 10 April, 2010)

[136] The production process is defined in detail in 3.2.1.

Table 17: The inventory No:3 for Doğan Brick and Tile Factory

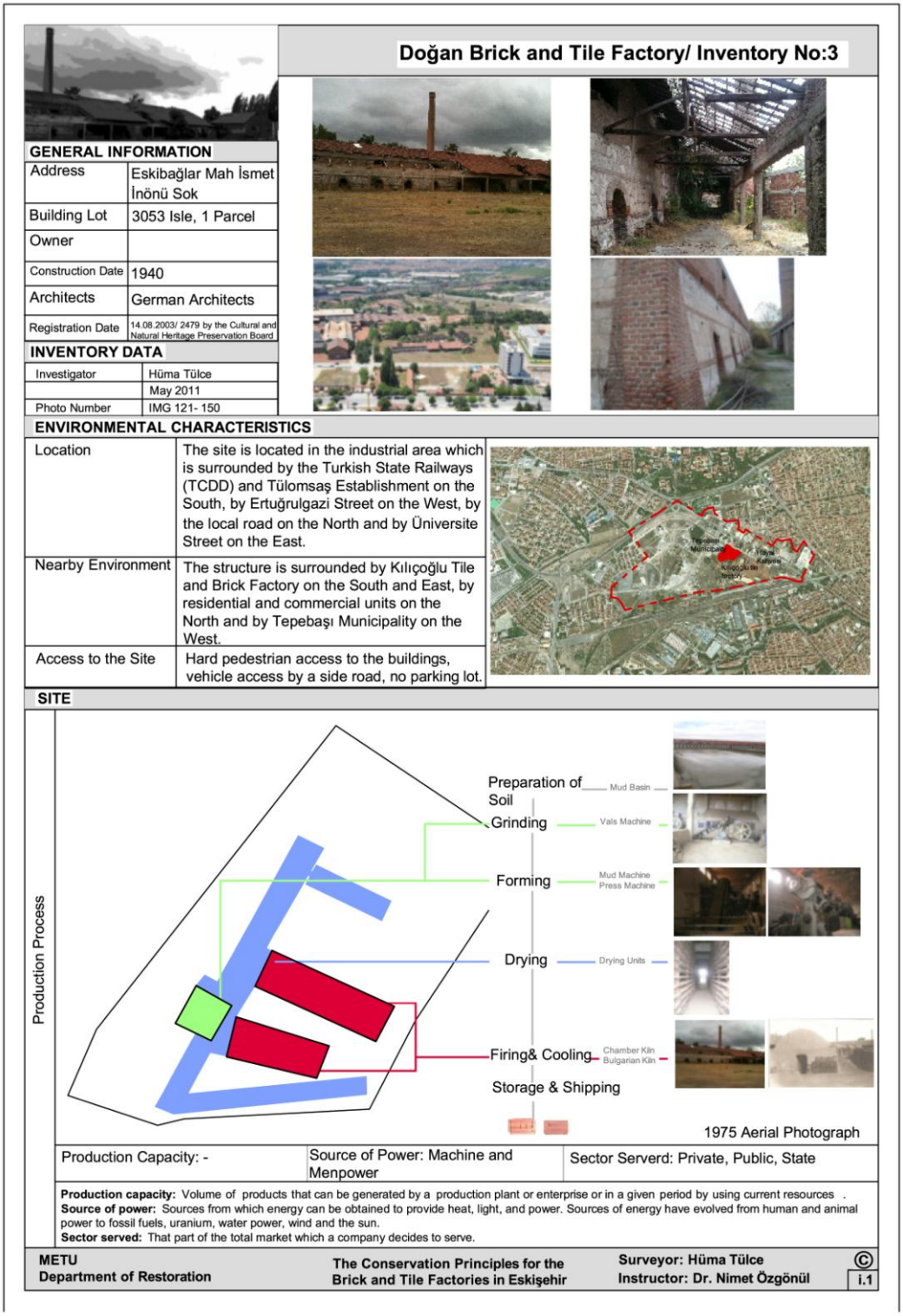
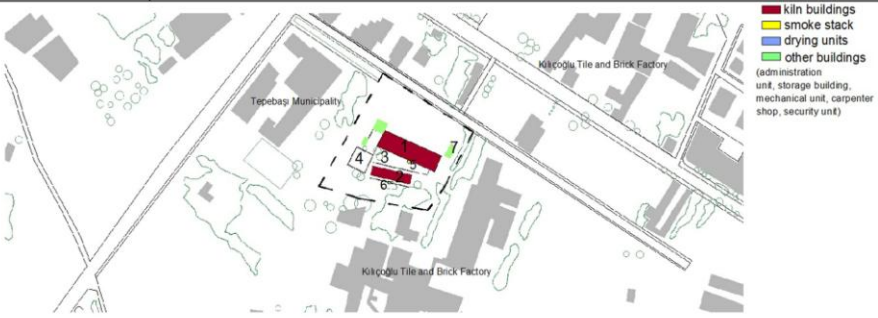


Table 18: The inventory No:3 for Doğan Brick and Tile Factory

Site Components

Open Area	No landscape element.					
Buildings	No	Original Function	Current Function	Period	Construction System & Material	Condition
	1	Kiln Building 1	Vacant	1950-75	Ground floor stone masonry and first floor concrete system with brick infill The gable roof with marseilles tile	Partially Destroyed
	2	Kiln Building 2	Vacant	1950-75	Ground floor stone masonry and first floor concrete system with brick infill The roof was destroyed	Partially Destroyed
	3	Drying Unit	Vacant	1950-75	Basement floor concrete system and first floor brick masonry The roof was destroyed	Destroyed
	4	Storage Building	Vacant	1950-75	Brick masonry The roof was destroyed	Partially Destroyed
	5	Smoke Stack 1	—	1950-75	Brick masonry	Good
	6	Smoke Stack 2	—	1950-75	Brick masonry	Good
	7	Security Unit	Vacant	1975-93	Brick masonry The gable roof with marseilles tile	Partially Destroyed
Mechanical Equipment	The mechanical equipments (vals machines, mud machines, presses...) were moved.					



Feature of the Structure

1-Kiln Building	The ground floor of the structure was constructed by stone masonry and first floor by concrete system with brick infill. The roof is gable roof with marseilles tile and some part of the roof was demolished. The plan of the building consists of five longitunidal axes. The external axes were used for drying units. The chamber kiln plan was seen and there are 12 chambers in the kiln and the access to the chambers are obtained by arched openings. Between the chambers the hot air flue tunnel was planned which was connected to the smokestock by air flues. Some of the external walls are destroyed. Due to the partially demolishment of the roof, the structure has been exposed to the physical deteriorations.	
2-Kiln Building	The ground floor of the structure was constructed by stone masonry and first floor by concrete system with brick infill. The roof is totally demolished. The plan of the building consists of five longitunidal axes. The external axes were used for drying units. The chamber kiln plan was seen and there are 8 chambers in the kiln and the system is same as the kiln building 1. The infill of the external walls were destroyed. Due to the partially demolishment of the roof, the structure has been exposed to the physical deteriorations.	
3-Drying Unit	The basement was constructed by concrete system and the ground floor by brick masonry. The roof and some parts of the structure are demolished and the plan scheme isn't totally legible.	
4-Storage Building	The building was constructed by brick masonry. The roof and some parts of the structure are demolished and the plan scheme isn't totally legible.	
5-Smokestack	The cylindirical formed smokestack was constructed by brick and connected to the building by flues for air ventilation.	
6-Smokestack	The square formed smokestack was constructed by brick and connected to the building by flues for air ventilation.	
7-Security Unit	The building was constructed by brick masonry with gable roof made on marseilles tile. The roof and some parts of exterior walls are demolished.	

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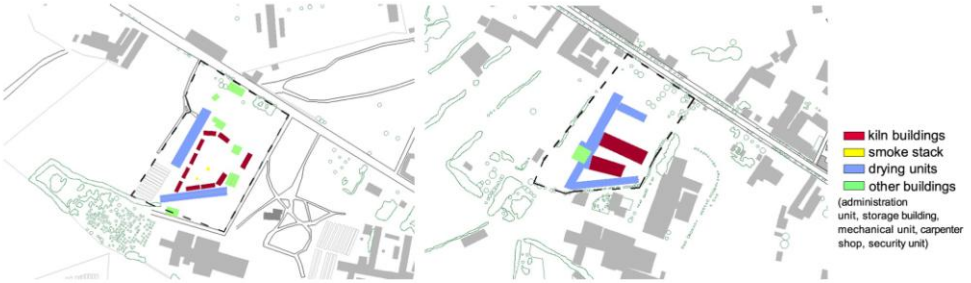
Table 19: The inventory No:3 for Doğan Brick and Tile Factory

HISTORY of SITE

Site History	In 1940, the factory was constructed by German Architects. In 1950, the components of the complex were 10 Bulgarian Kilns, two drying units and 2 smoke stacks. In 1975, all of the Bulgarian Kilns were demolished and two chamber kiln buildings were constructed. Today, two kiln buildings, two smoke stack, partially storage building and drying unit can be seen; however, two of the drying units were demolished. In 27.07.2011, the removal decision against the unauthorized use of the site by the container of a taxi stand was taken.

1950 1975



SIGNIFICANCE OF THE SITE

Instrinsic Values	~~Age~~ ~~Historical~~ ~~Technical/ Artistic~~ ~~Document~~ ~~Originality~~ ~~Construction and Material~~ Mechanical Component
Extrinsic Values	Aesthetic ~~Sociocultural~~ ~~Political~~ ~~Symbolic~~ ~~Educational~~ ~~Identity~~ ~~Group~~ ~~Rarity~~
Economic Values	~~Use/ Functional~~ ~~Market~~

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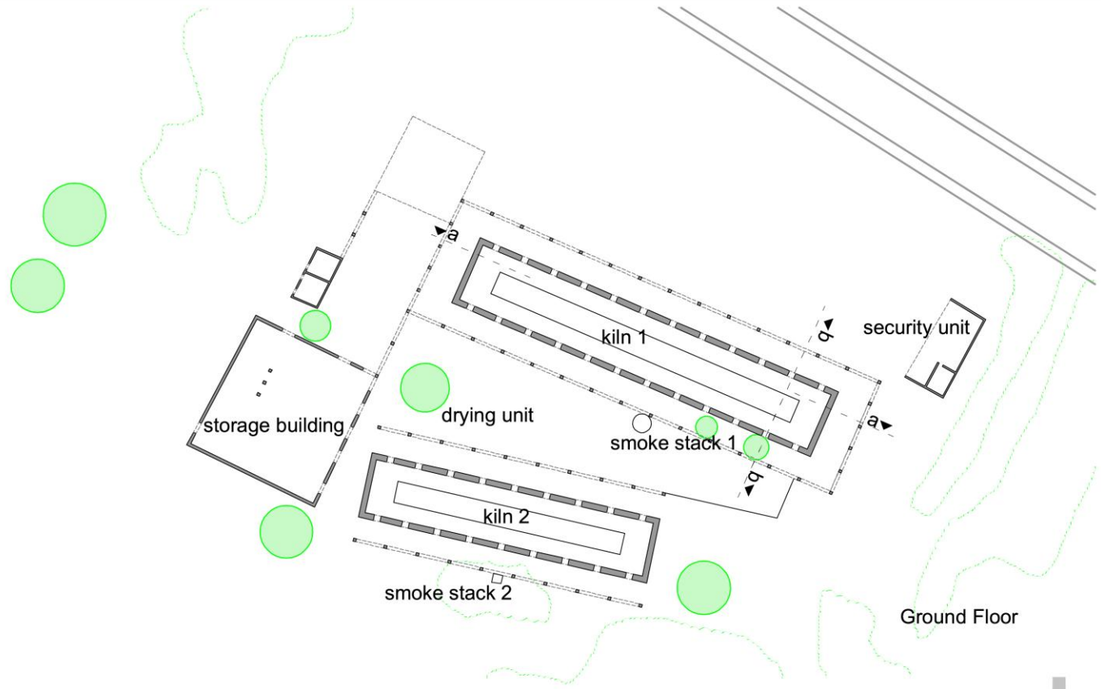
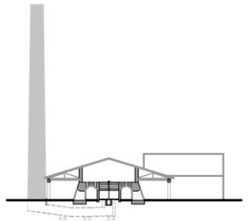
Table 20: The inventory No:3 for Doğan Brick and Tile Factory

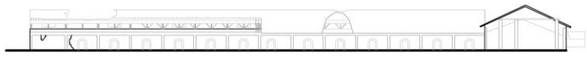
PLAN/ SECTION/ ELEVATION



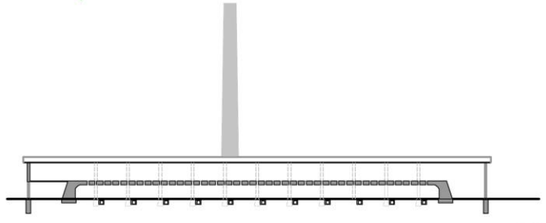
Ground Floor



bb section



North Elevation (Kiln 1)



aa section

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3.2.3.4. Kartal Brick and Tile Factory

The area is surrounded by the Kılıçoğlu Tile Factory on the South and the West, by the TCDD houses on the North and by the transformer buildings on the East.[137] The hard access is obtained due to the location. The factory was registered according to the decision of 14.08.2003/ 2479 by the Cultural and Natural Heritage Preservation Board. The owner of the site is the Murat Ilgaz and Partners.

In 1948, the factory was established. According to the 1950 aerial photograph, the components of the complex were 5 Bulgarian Kilns, a drying unit and a smoke stack. Between 1950- 1975, all of the Bulgarian Kilns and drying unit were demolished and a kiln building was constructed. Today, two of the kiln buildings, two of the smoke stacks and a mechanical unit are still remaining.[138]

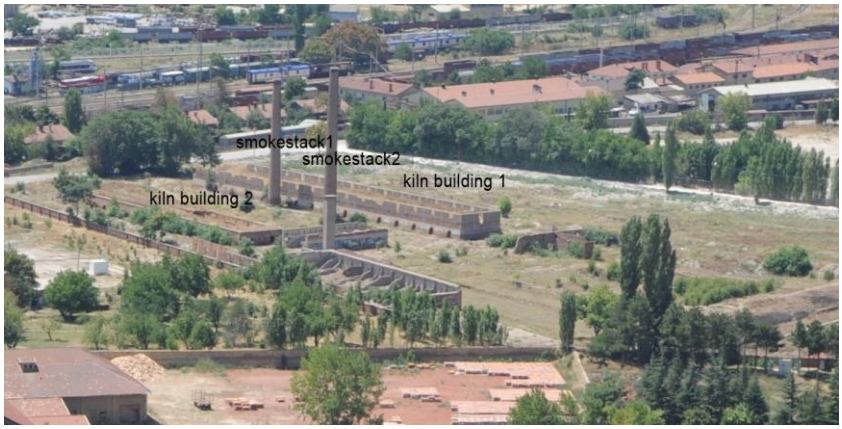

Figure 59: The structures of the Doğan Factory (*http://www.eskisehir.gov.tr/,* accessed on 10 April, 2010)

The dimensions of the rectangular formed **kiln building 1** are 10.90 x 87.53m and two storey height. The ground floor is stone masonry and first floor is concrete system with brick infill. The roof was destroyed. The structure is chamber kiln. The chamber kiln is approximately 83.60 x 2.40m, there are arch openings on the north and south. There are 15 chambers. The ground is soil. On the longitidutional elevations, there are square and rectangular formed openings. On the first floor there are concrete columns, the beams on the ground level and high levels of the wall. The south edge of the structure and the roof were demolished.

[137] The location of the factory was shown in the environmental characteristics in inventory no: 5, p.1
[138] The transformation process based on 1950 and 1975 maps are indicated in the inventory no: 5, p.4

The dimensions of the rectangular **kiln building 2** dimensions are 10.90 x 87.53m and two storey height (3.40m). The structure is constructed by brick masonry. In the chamber kiln building, the parts of the vaults were demolished and over them the 20 cm concrete floor is constructed. On the elevation, there are 7 arched openings. The structure is partially destroyed and there are structural problems. The roof of the kiln buildings were demolished that causes the physical deterioration; such as dampness, powdering, material loss, macrobiological growth. The balance of the structures have been decreased because of the demolished parts and the disintegration of the binding material and that cause destruction on the upper parts of the vaults and walls.

The kiln building 1 has two **smokestacks** with approximately 30 m height. The smokestacks were constructed by brick masonry and become narrow on the higher levels. There are metal steps on the surface. On the smokestack 2 is weakened by a crack and on two of the smokestacks there are dampness problems. **The mechanical unit** in concrete system with brick infill building was destroyed.

Table 21: The inventory No:4 for Kartal Brick and Tile Factory

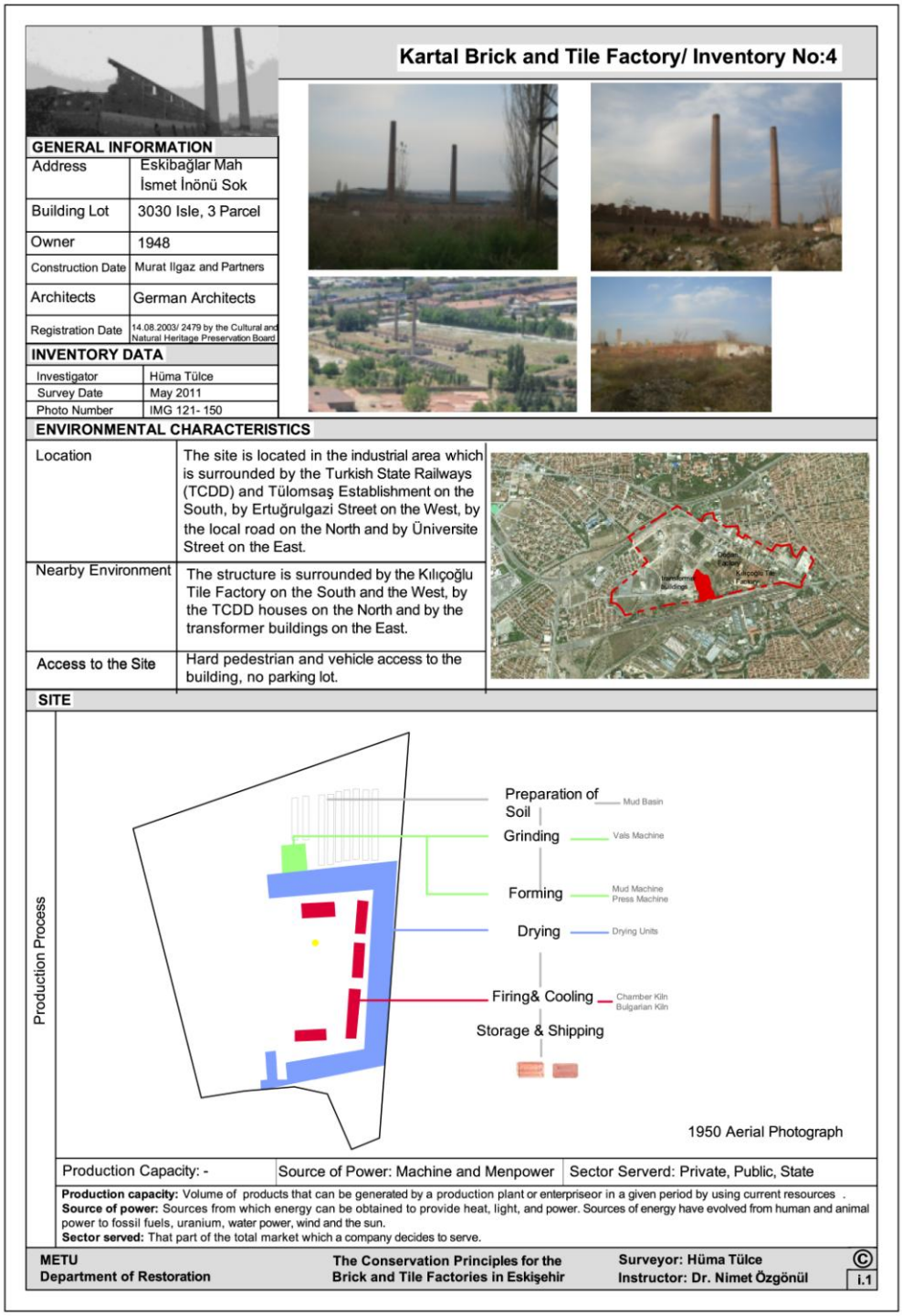

Table 22: The inventory No:4 for Kartal Brick and Tile Factory

Site Components

Open Area	No landscape element.					
Buildings	No	Original Function	Current Function	Period	Construction System & Material	Condition
	1	Kiln Building 1	Vacant	1975-97	Ground floor stone masonry and first floor concrete system with brick infill The roof was destroyed	Partially Destroyed
	2	Kiln Building 2	Vacant	1950-75	Ground floor brick masonry The roof was destroyed	Destroyed
	3	Smoke Stack 1	—	1975-97	Brick masonry	Good
	4	Smoke Stack 2	—	1975-97	Brick masonry	Good
	5	Mechanical Unit	Vacant	1950-75	Brick masonry The roof was destroyed	Destroyed
Mechanical Equipment	The mechanical equipments were moved before 1997.					

Feature of the Structure

1-Kiln Building 1	The rectangular building dimensions are 10.90 x 87.53m and two storey height. The ground floor is stone masonry and first floor is concrete system with brick infill. The roof was destroyed. The structure is chamber kiln. The chamber kiln is approximately 83.60 x 2.40m, there are arch openings on the north and south. There are 15 chambers. The ground is soil. On the longitidutional elevations, there are square and rectangular formed openings. On the first floor there are concrete coloumns, the beams on the ground level and high levels of the wall. The south edge of the structure and the roof were demolished.	
2-Kiln Building 2	The rectangular building dimensions are 10.90 x 87.53m and two storey height (3.40m). The structure is constructed by brick masonry. In the chamber kiln building, the parts of the vaults were demolished and over them the 20 cm concrete floor is constructed. On the elevation, there are 7 arched openings. The structure is partially destoyed and there are structural problems.The roof of the kiln buildings are demolished that causes the physical deterioration; such as dampness, powdering, material loss, macrobiological growth. - The balance of the structures are decreased because of the demolished parts and the disintegration of the binding material and that cause destruction on the upper parts of the vaults and walls.	
3,4-Smokestacks 1,2	The kiln building 1 has two smokestacks with approximatelly 30 m height. The smokestacks were constructed by brick masonry and become narrow on the higher levels. There are metal steps on the surface. On the smokestack 2 is weakened by a crack and on two of the smokestacks there are dampness problem.	
5-Mechanical Unit	The concrete system with brick infill building is destroyed.	

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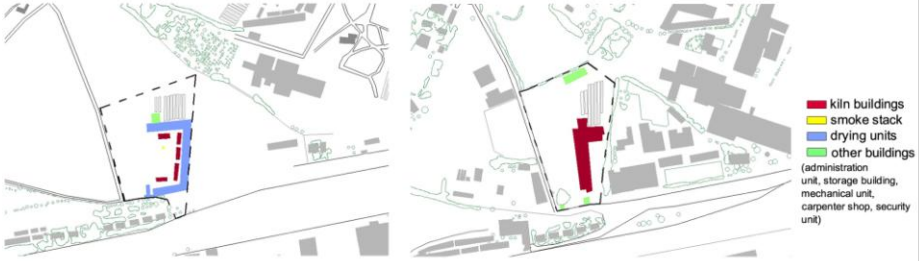
Table 23: The inventory No:4 for Kartal Brick and Tile Factory

HISTORY of SITE

Site History	In 1948, the factory was established. According to the 1950 aerial photograph, the components of the complex were 5 Bulgarian Kilns, a drying unit and a smoke stack. Between 1950- 1975, all of the Bulgarian Kilns and drying unit were demolished and a kiln building was constructed. Today, two of the kiln buildings, two of the smoke stacks and a mechanical unit are still remaining .

1950 1975



SIGNIFICANCE OF THE SITE

Instrinsic Values	~~Age~~ ~~Historical~~ ~~Technical/ Artistic~~ ~~Document~~ ~~Originality~~ ~~Construction and Material~~ Mechanical Component
Extrinsic Values	Aesthetic ~~Sociocultural~~ ~~Political~~ ~~Symbolic~~ ~~Educational~~ ~~Identity~~ ~~Group~~ ~~Rarity~~
Economic Values	~~Use/ Functional~~ ~~Market~~

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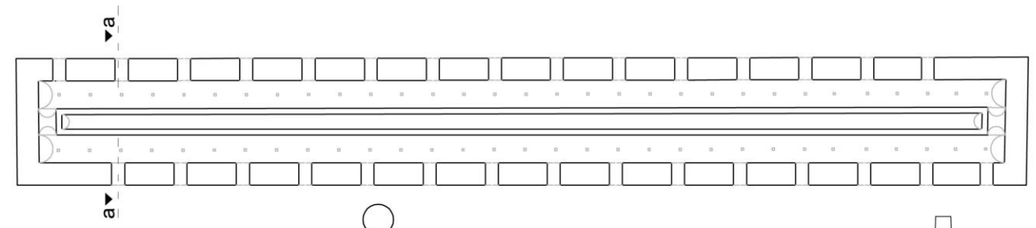
Table 24: The inventory No:4 for Kartal Brick and Tile Factory

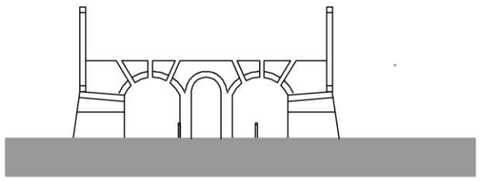
PLAN/ SECTION/ ELEVATION



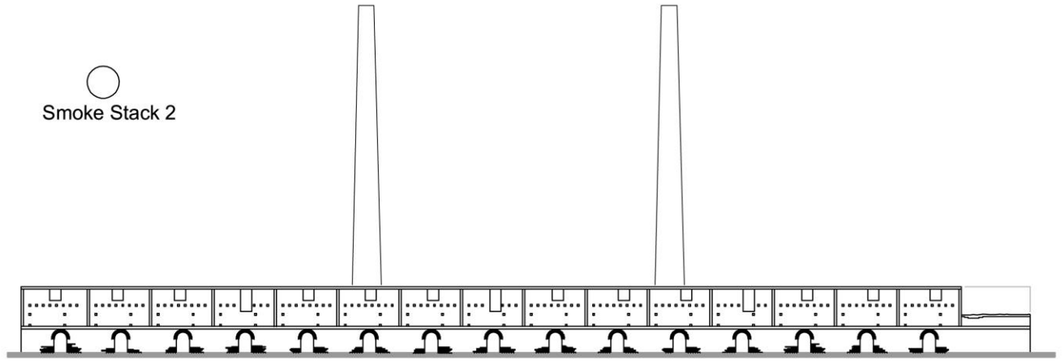
Kiln Building 1

Smoke Stack 1

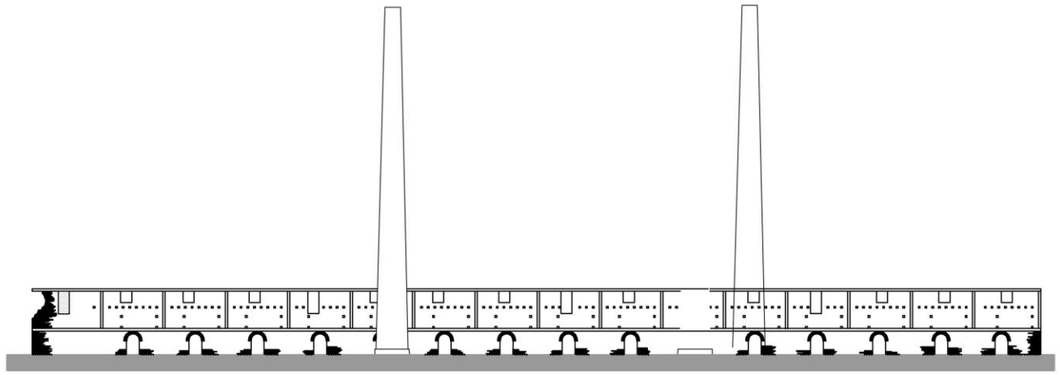
Smoke Stack 2



aa Section



East Elevation



West Elevation

1/ 500 scale

- Nalbant, K., The plan, sections and elevations of the complex, Miyar Mimarlık, Ankara

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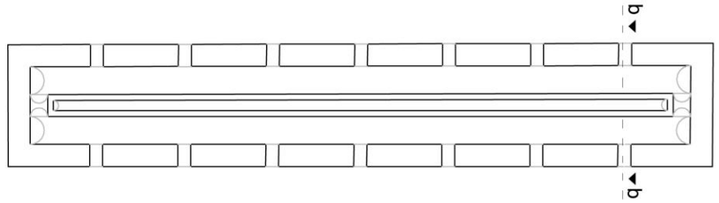
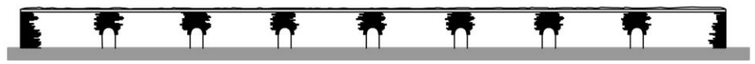
Table 25: The inventory No:4 for Kartal Brick and Tile Factory

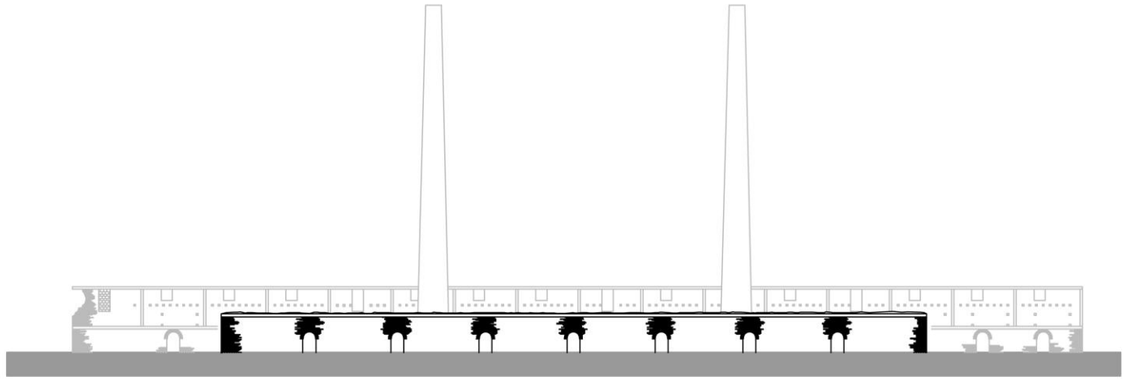
PLAN/ SECTION/ ELEVATION



bb Section



West Elevation



East Elevation

- Nalbant, K., The plan, sections and elevations of the complex, Miyar Mimarlık, Ankara

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Table 26: The inventory No:4 for Kartal Brick and Tile Factory

THE CONSERVATION, MAINTENANCE AND REGENARATION PROJECT PROPOSAL by MİYAR ARCHITECTURE

In the content of the project; firstly the location, site, research and documentation of the factories are defined. Secondly the historical analysis of the structures, legal regulations and current condition are determined. In the evolution; the values, problems, potentials are represented. The problems are analyzed in two scales as areal/ parcel and building scale. In the end; conservation, transformation and regeneration proposal are made. This section consists of principles and conservation approaches and relation with the final development plan with the aim of the projects.

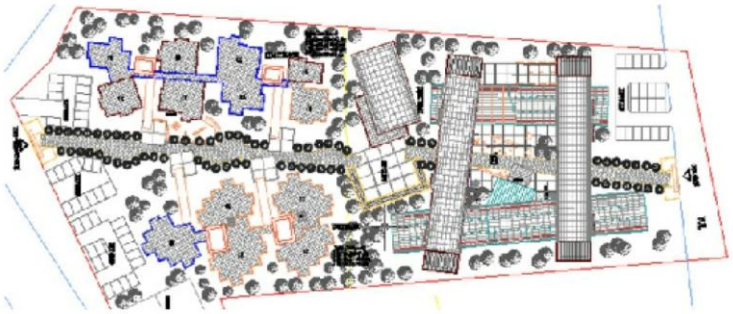
During the research and documentation, for production of the concept projects ; the architectural drawings were produced. This study is planned by two methods; the control and update the historic drawings and measurement of the structures in 1/100 scale. Then all of the structures with mechanical equipments were defined.

The aim of the projects were summarized as the structures that lost their functions were integrated with the new buildings to service to the city.

The aims are;

- Conservation with sustainability
- The reuse with modern functions
- The integrity of the area is obtained by the removal of the in appropriate additions, materials and installments.
- The interventions for physical deteriorations
- The interventions with the compatible materials and construction technics.

The project consists of two parts. The south part of the area is desined as hotel area. The new structures are decided to be designed over the kilns without connection to them. The public spaces of the function are solved in the kilns and over them the accodomadation units are plan d part of the proje



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Department of Restoration

The Conservation Principles for the Brick and Tile Factories in Eskişehir

Surveyor: Hüma Tülce
Instructor: Dr. Nimet Özgönül

© i.6

3.2.3.5. Kurt Brick and Tile Factory (Today Espark Shopping Mall)

The area surrounded by industrial complexes on the South, by Çift Kurt Tile Factory and residential units on the West, by residential and commercial units on the North and East. [139]

Kurt Factory was constructed in 1928 by German Architects. The owners of the factory were Kurt Sait and Muhtar Baştürk. In 1933 Kurt Sait ended partnership and constructed Çift Kurt Factory. The components of the complex were drying units, mechanical unit, furnace building and three smoke stacks. According to 1975 aerial photograph, a smoke stack was constructed. In 1997, all of the structures were demolished by the owners of the area except the smoke stacks. In 2007, Espark Shopping Mall constructed, some of the structures and a smoke stack were reconstructed. These buildings are used as commercial purposes.[140] The Espark Shopping Mall was constructed in 2006 by Batu Mimarlık. The owner of the area is Ece Türkiye Proje Yönetimi A.Ş. is a joint-venture between Ece Group and General Growth Properties(GGP). The structures except the shopping mall were registered in 14.08.2003/ 2479 by the Cultural and Natural Heritage Preservation Board; despite the buildings were reconstructed.

Figure 60: The reconstruction of the smokestacks in 1997

The structures that were constructed in 1997 are shopping mall, exhibition and commercial units, smokestacks. The **shopping mall** is four storey height and constructed in concrete

[139] The location of the factory was shown in the environmental characteristics in inventory no: 3, p.1
[140] The transformation process based on 1950 and 1975 maps are indicated in the inventory no: 3, p.5

system with flat roof in 2007. **The exhibition and commercial units** which were the mechanical units of the factories, were reconstructed with brick masonry. The smokestacks were also reconstructed by concrete with brick cladding in 2006 and one of them was moved.[141]

Figure 61: The structures of the Espark Shopping Mall (author, 2011)

[141] The plans, sections and elevations of the shopping mall are indicated in the inventory no: 3, p.3,4

Table 27: The inventory No:5 for Kurt Brick and Tile Factory/ Espark Shopping Mall

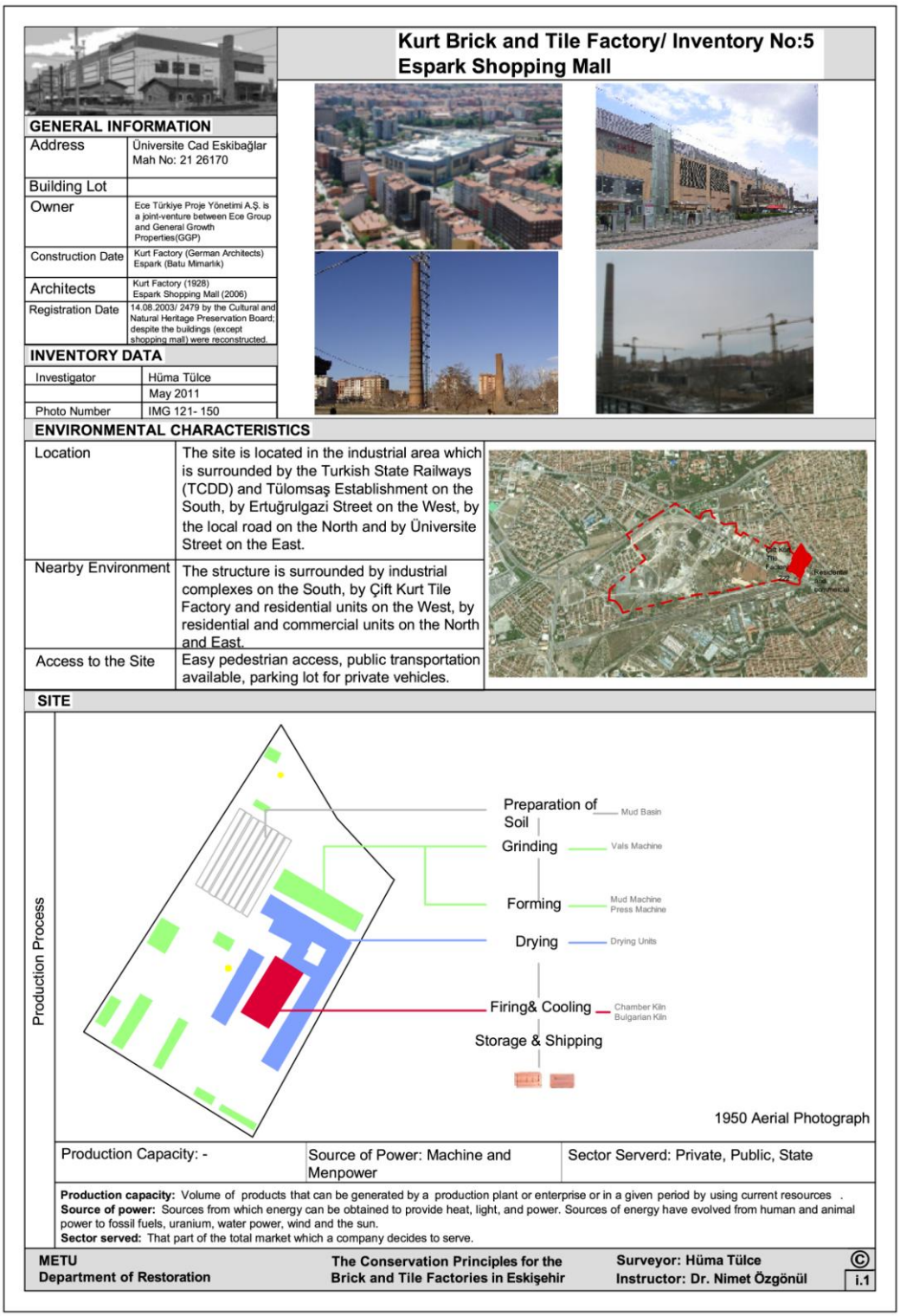
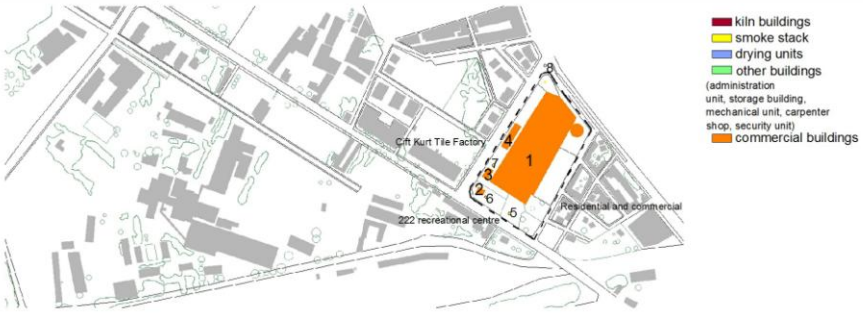


Table 28: The inventory No:5 for Kurt Brick and Tile Factory/ Espark Shopping Mall

Site Components

Open Area	No landscape element.					
Buildings	No	Original Function	Current Function	Period	Construction System & Material	Condition
	1	Shopping mall	Shopping mall	2006	Concrete System Flat roof	Good
	2	—	Exhibition	2006	Brick masonry The gable roof with marseilles tile	Reconstruction
	3	—	Commercial	2006	Brick masonry The gable roof with marseilles tile	Reconstruction
	4	—	Commercial	2006	Brick masonry The gable roof with marseilles tile	Reconstruction
	5	Smoke Stack 1	—	2006	Concrete System with brick cladding	Reconstruction
	6	Smoke Stack 2	—	1975-97	Brick masonry	Good
	7	Smoke Stack 3	—	1975-97	Brick masonry	Good
	8	Smoke Stack 4	—	1975-97	Brick masonry	Good
Mechanical Equipment	The mechanical equipments (vals machines, mud machines, presses...) were moved.					



Feature of the Structure

2-Exhibition Unit 3,4- Commercial Unit	The buildings were reconstructed while building the shopping mall in 2006. The construction system is brick masonry.	
5- Smokestack1	The smokestack was moved in 2006.	
6,7,8- Smokestack	The smokestacks were repaired in 2006.	

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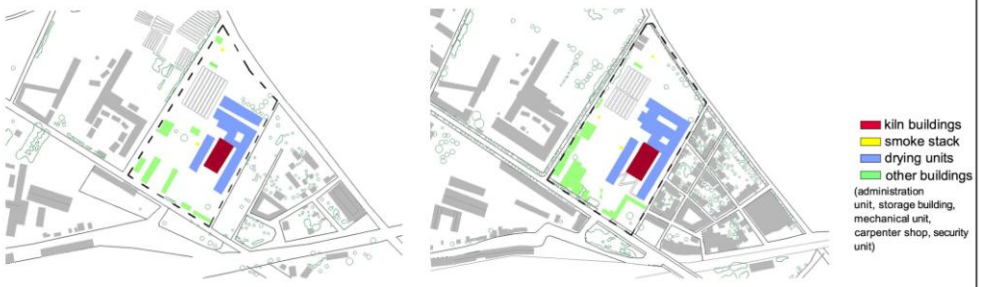
Table 29: The inventory No:5 for Kurt Brick and Tile Factory/ Espark Shopping Mall

HISTORY of SITE

Site History	In 1928, the factory was established by Kurt Sait. The components of the complex were drying units, mechanical unit, furnace building and three smoke stacks. Between 1950- 1975, a smoke stack was constructed. In 1997, all of the structures were demolished except the smoke stacks. In 2007, Espark Shopping Mall constructed, some of the structures and a smoke stack were reconstructed.These buildings are used as commercial purposes.

1950 1975



SIGNIFICANCE OF THE SITE

Instrinsic Values	Age	Historical	Technical/ Artistic	Document	Originality
	Construction and Material		Mechanical Component		
Extrinsic Values	Aesthetic	Sociocultural	~~Political~~	Symbolic	~~Educational~~
	Identity	Group	Rarity		
Economic Values	~~Use/ Functional~~	~~Market~~			

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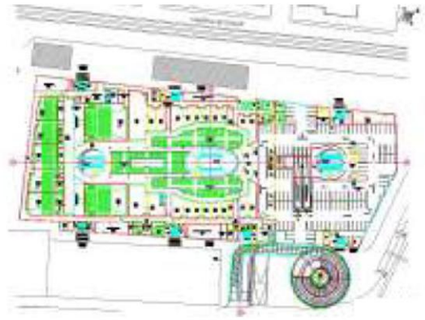
Table 30: The inventory No:5 for Kurt Brick and Tile Factory/ Espark Shopping Mall

PLAN/ SECTION/ ELEVATION

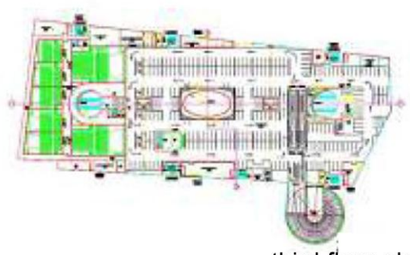
1-Shopping Mall: The new building is four storey height and constructed in concrete system with flat roof in 2007.

floor plan

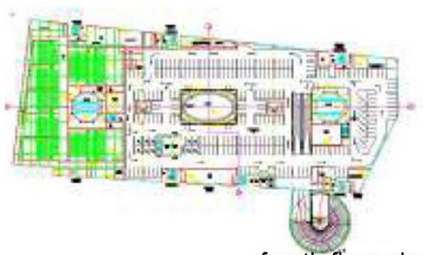
first floor plan



second floor plan



third floor plan



fourth floor plan

- Buyan, H., The plan, sections and elevations of the complex, Batu İnşaat, Eskişehir

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Table 31: The inventory No:5 for Kurt Brick and Tile Factory/ Espark Shopping Mall

ORIGINAL PLAN/ SECTION/ ELEVATION

- Buyan, H., The plan, sections and elevations of the complex, Batu İnşaat, Eskişehir

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3.2.4. The Transformation of the Brick and Tile Factories

The transformation of the area was started with the establishment of the railway. With the possibilities of transportation, the area was formed as an industrial area. Between 1923 and 1950, the industrial complexes with varios production type particularly with brick and tile were constructed. In the 1950 aerial photograph; the brick and tile, flour, machine and lumber factories were seen. The brick and tile factories were Başak, Kartal, Aslan, Doğan, Fil, Kılıçoğlu, Çift Kurt and Kurt Tile Factories. The general characteristics of these factories at this date is the the Bulgarian Kilns[142], drying units and smoke stacks. The structuring except industrial structures was scattered.

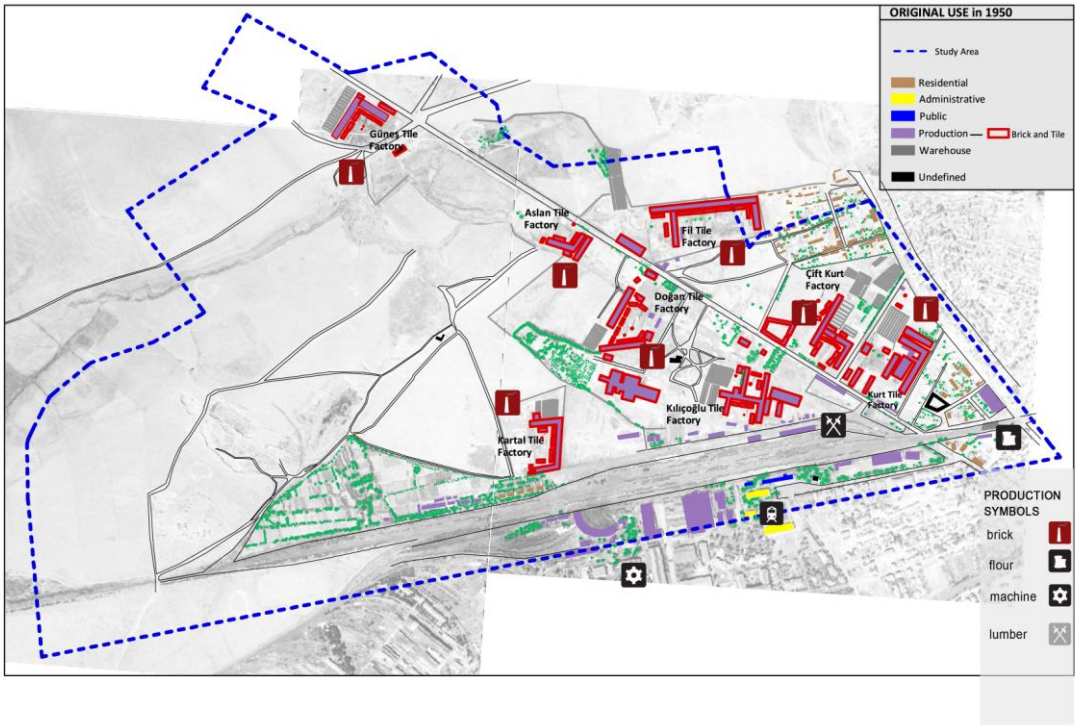


Figure 62: The Production Types of the Industrial Buildings and Complexes in 1950 (produced after the 1950 aerial photograph is obtained from the General Command of Mapping)

In the 1975 aerial photograph; food, tire rim, wine and magnesite (lüle taşı) factories were constructed. The new variety of production techniques were introduced. The Güneş Brick and Tile Factory was established in addition to the brick and tile factories. Except some factories such as Güneş, Çift Kurt, the factories started to use the Tunnel or Hoffman Kilns

[142] The Bulgarian Kiln (Bulgar Fırını): The firing operation is done inside of the kiln and the connection with the stacks provide by the ventilation.

with the improvements in the kiln technology. The residential units for the workers around the railway were increased.

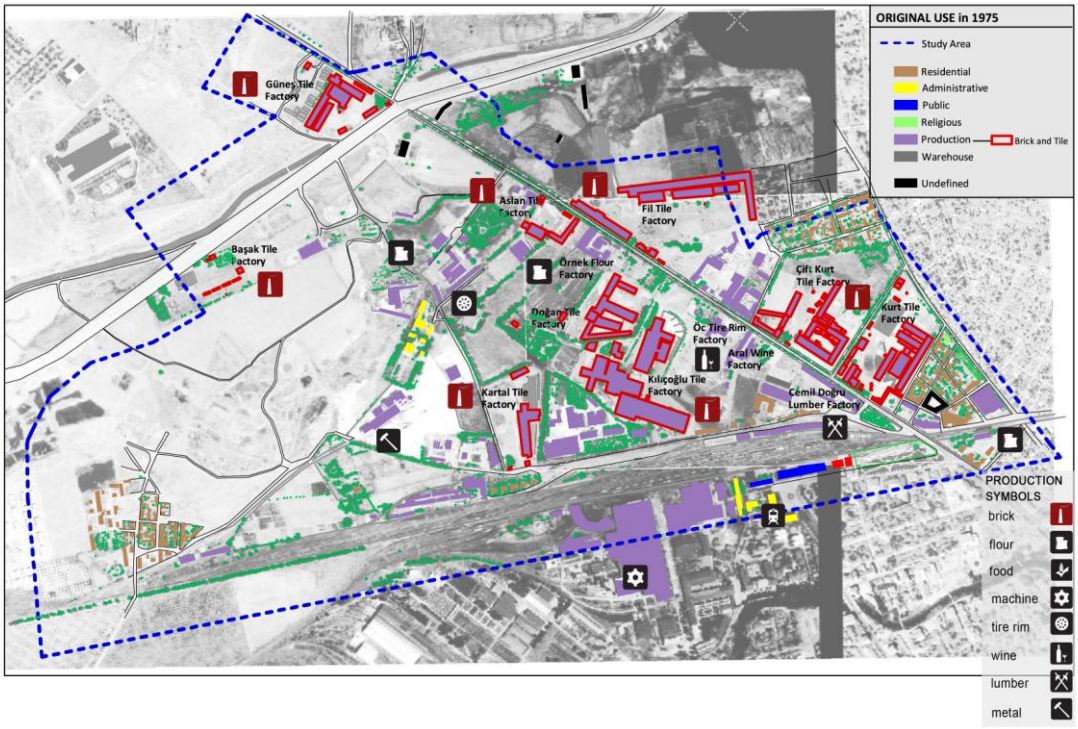


Figure 63: The Production Types of the Industrial Buildings and Complexes in 1975 (produced after the 1975 aerial photograph is obtained from the General Command of Mapping)

The production functions of the factories were moved to the organized in industrial zone in 1980. With the establishment of the universities, the necessity for the accommodation and commerce were increased and new structuring based on these functions, generally massive or high storey buildings have been constructed. The improvements of the municipality enchance the local tourism activities. Therefore, the commercial and residential character of the area has become densed.

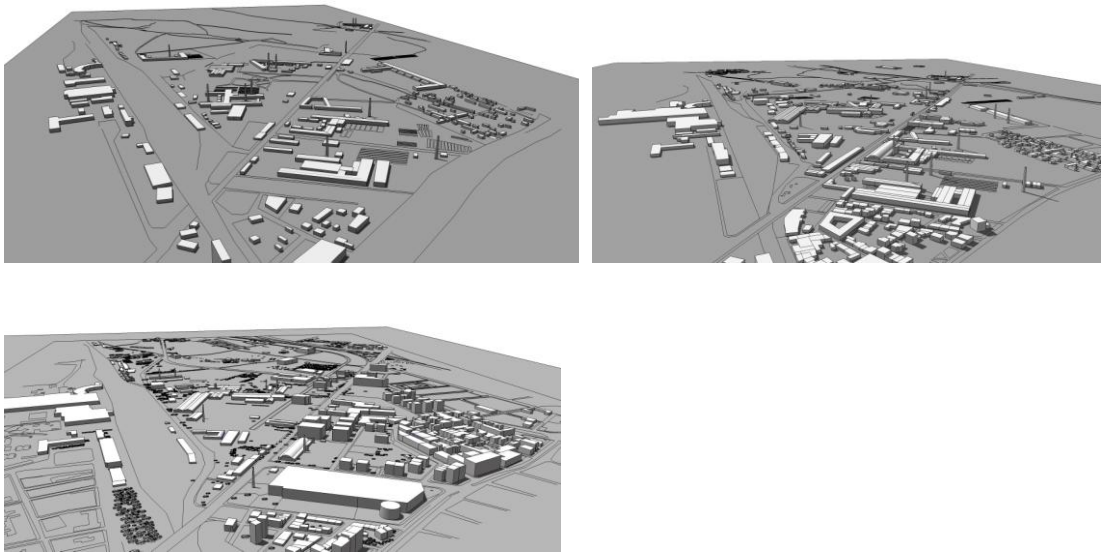


Figure 64: The transformation of the area in 1950, 1975 and 2012

3.2.5. The Conservation and Planning Activities

The plans of Eskişehir are dated as 1956, 1980, 1986, 1989, 1995, 1997, 2002 and 2011.

1956 Plan: The first development plan of Eskişehir was established by a project competition.

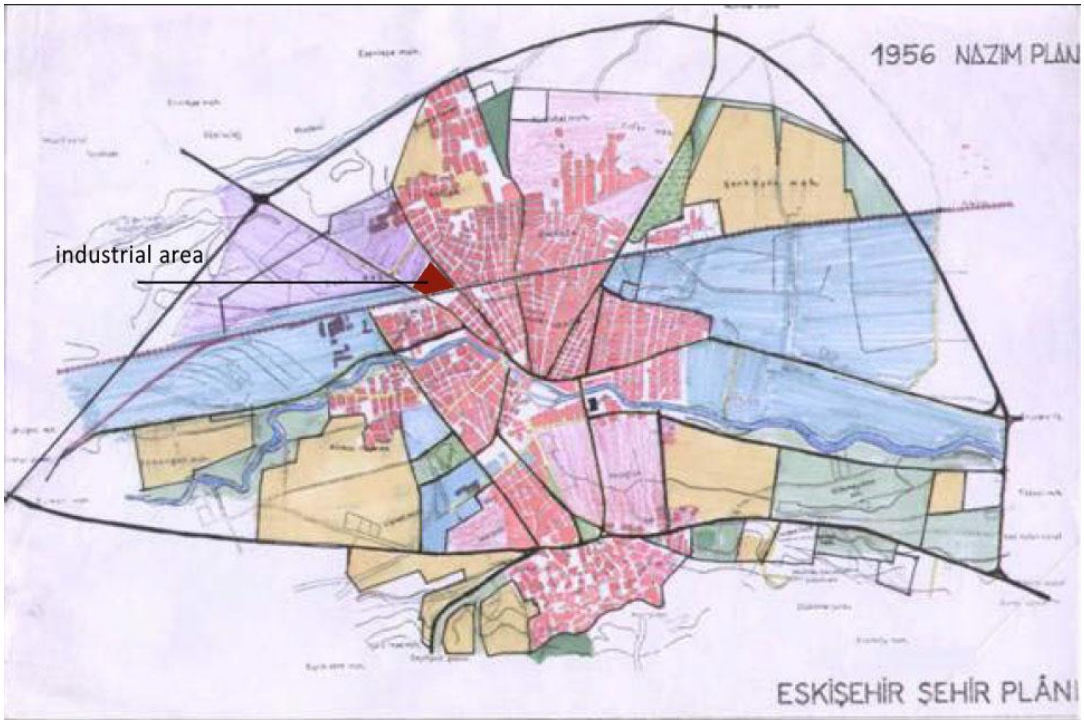


Figure 65: Development plan of Eskişehir in 1956 (Özel, 2009)

Hereby with the plan , the planned urbanization of the city was started. The factory district was defined as “industrial area” in the plan.[143]

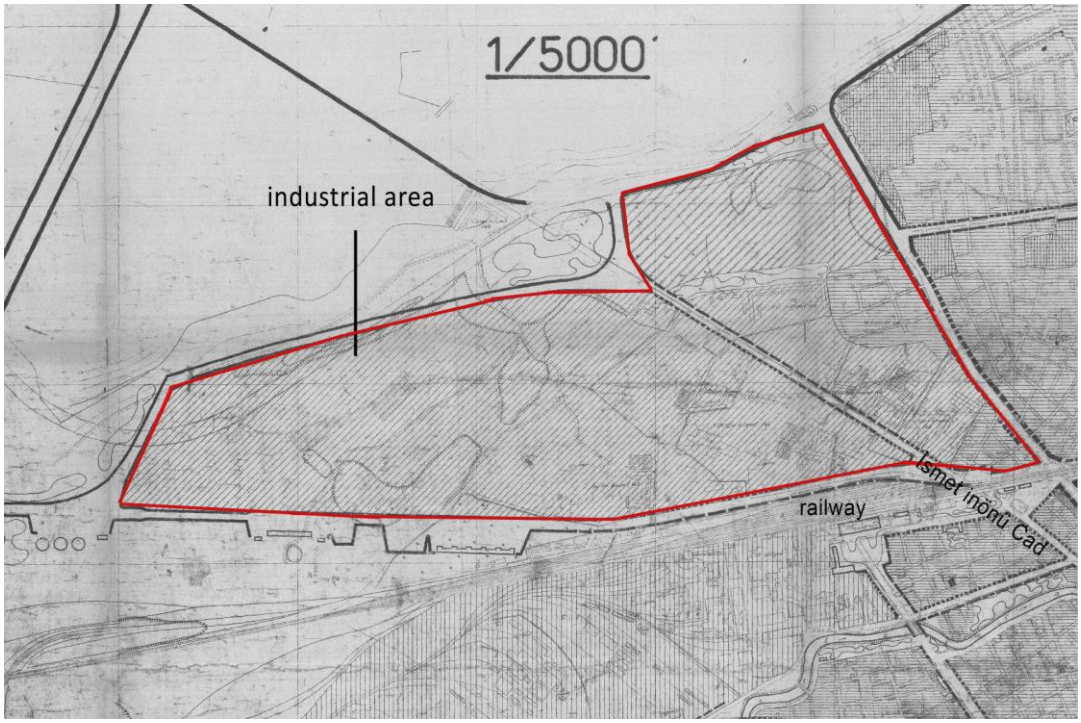


Figure 66: 1/5000 Development plan of Industrial Area in 1956 (Archive of the Eskişehir Büyükşehir Municipality)

With the plan, the high way was planned according to the railway. So the city was expanded through this network and the new development areas were defined. An overpass, which was constructed over the railway network between İsmet İnönü Street and the industrial area, became a new centre. Thus, the city was improved through the industrial area.

Along with the increase in the employment ratio and immigration, the necessity of the housing was raised. The integrated morphology of the city started to change and the society settled to the areas near to the industrial areas. With cooperative system, a new housing

[143] The development plan was delegated in 1952 on 1/5000 scale. In 1954, 1/2000 scale; in 1956, 1/1000 scale plans were approved.
Corporation managed the Competition: İller Bankası
Members of the Jury: Orhan Alsaç, Hicri Sezen,Mithat Yenen, Cevet Erbel, Celal Uzer, İlhan Ersoy
Winners: Mehmet Ali Topaloğlu, Bülent Berksan
(The Official Website of the Chamber of Architects in Turkey, *www.mimarlarodasiyarişmalar.com,* accessed on April 15,2011)

typology different than the Republic Period was developed. In addition to this, many state establishment settled out of the plan control.[144] Herewith, the urban development was improved irregular and disconnected.

The problems of the plan were that; unrelated plan decisions, many unconnected plans, the financial insufficiency, the fewness of the workers, adjacent buildings, inadequate infrastructure.[145] With the establishment of Anadolu University (Eskişehir İktisadi ve Ticari İlimler Akademisi) in 1958, today the character of the city has started to change to a student city.

The macroform of the city was changed firstly by the highway transportation and secondly the law of property ownership (kat mülkiyet kanunu) in 1965. From the establishment of the Republic, the private ownership and one or two storey dwellings were constructed. By the law of 1965; the dwellings became 7-8 storeys height and all storeys have different owners. In time, these apartments filled the urban holes and became dominant in the urban silhouette. The urban identity of Eskişehir was started to change.

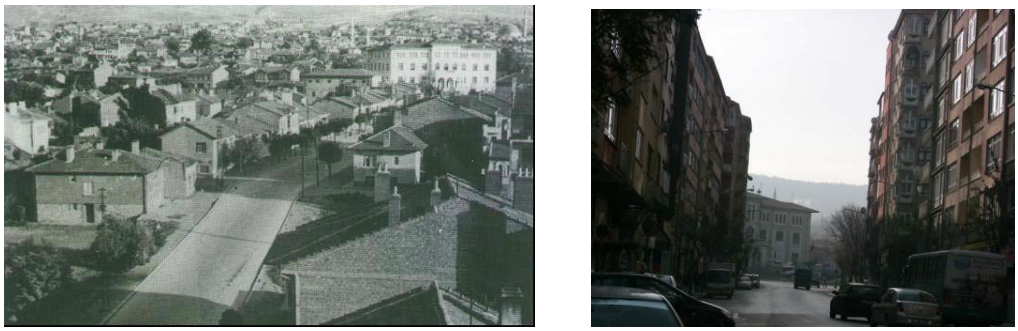


Figure 67: a) Before development plan Yunus Emre Street (Yılmaz, 2009) **b)** After development plan Yunus Emre Street (Yılmaz, 2009)

> " In this manner; the one or two storey dwellings were demolished in Sakarya, Muttalıp, Yunusemre, İsmet İnönü, Cengiz Topel Street and instead of them, eight storey height, adjacent dwellings were constructed. "[146]

[144] Yılmaz, Ebru, 2009, Decisive Role of Development Process of The City of Eskişehir and Appaering New Housing Locations During this Period, unpublished master's thesis submitted to Graduate School of Sciences Architecture Program, Osmangazi University, Eskişehir

[145] Oruç, N., Aksoylu, S., *Eskişehir'de Kentleşme- Sanayileşme Etkileşimi- Bir Sanayi Kentinin Planlama ve Uygulama Sorunları Eskişehir Örneği Kolokyumu,* Dünya Şehircilik Günü Türkiye Daimi Komi, 1985

[146] Aksoylu, Sevin, 1999, *1960'lardan 2000'lere Eskişehir'de Mekansal Gelişim,* Arredamento Mimarlık, İstanbul, pp. 82-97

1980 plan: The second development plan was approved.[147] With the rapid urban development, the plan became inadequate and caused the uncontrolled progress of the city. The private investments were increased and the "gecekondu"[148] started to be constructed around the industrial establishments. Therefore, the urban areas became insufficient.[149]

The contradictions between 1956 and 1978 development plan were occurred. When there was a disagreement between plans, any applications could not be done on these areas until the new application plan ended. However, because of the increased pressure; in many areas the 1956 plan was applied. [150]

The plan aimed to encourage the city to improve through the East. The Organized Industrial Zone (EOSB)[151] was established in 1975 over Eskişehir-Ankara highway on 300 acres area. In 1981, 26 industrial establishments began production. The EOSB was provided the displacement of industrial establishments, that had been located in the residential area and enabled the urban traffic. The production function of the industrial buildings and complexes in the industrial area were moved to the zone.

1986 Plan:[152] The industrial area was defined as "the urban study area except the residences". The physical transformation, which was occurred by the law of property ownership, was supported by the 1986 development plan.[153] Therefore, the physical character of the city changed.

[147] When the population increased from 120.000 to 240.000, the new development plan on 1/5000 scale was approved in 10.05.1977. The development plan corresponding to 19 slum quarters on 1/1000 scale was approved in 17.12.1980.

[148] "Gecekondu" is translated in English by "slum, shanty,squatter's house or squatter town. Each of these translations is in fact an interpretation that refer to research traditions and development-oriented state interventions" Pérouse, Jean-François, 2004, "Deconstructing the Gecekondu"', *European Journal of Turkish Studies, Thematic Issue N°1 - Gecekondu, http://www.ejts.org/document195.html*, France

[149] Oruç, N., Aksoylu, S., *Eskişehir'de Kentleşme- Sanayileşme Etkileşimi- Bir Sanayi Kentinin Planlama ve Uygulama Sorunları Eskişehir Örneği Kolokyumu,* Dünya Şehircilik Günü Türkiye Daimi Komi, 1985

[150] Sökmen Polat, 1985, Sanayileşme- Kentleşme Etkileşimi ve Eskişehir İmar Planı Çalismaları, Bir Sanayi Kentinin Planlama ve Uygulama Sorunları Eskişehir Örnegi Kolokyumu, Türkiye 9. Dünya Şehircilik Günü, Eskişehir

[151] The Organized Industrial Zone (EOSB): After World War II; the industries, that integrated each other, were organized to settle together to provide rational production.

[152] ... The 1/5000 scale development plan was improved by Polat Sökmen and approved in 06.10.1986. (Sökmen, 1986)

[153] With 1986 plan, in the main streets the storey of dwellings were increased to 5-6-7-8 and in interior lots, the storey height was determined minimum 4 storey.

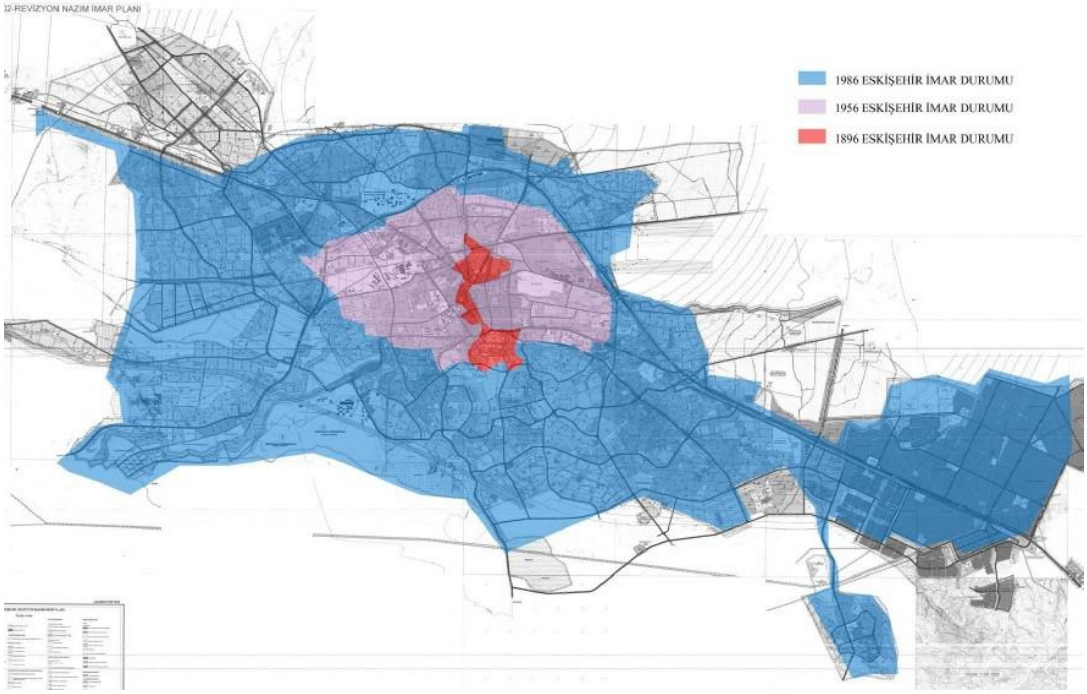


Figure 68 : 1896, 1956 and 1986 cadastral extract of Eskişehir (Archive of the Eskişehir Büyükşehir Municipality)

1989 Plan: The industrial area was determined as "the detailed plans of the area will be drawn later".

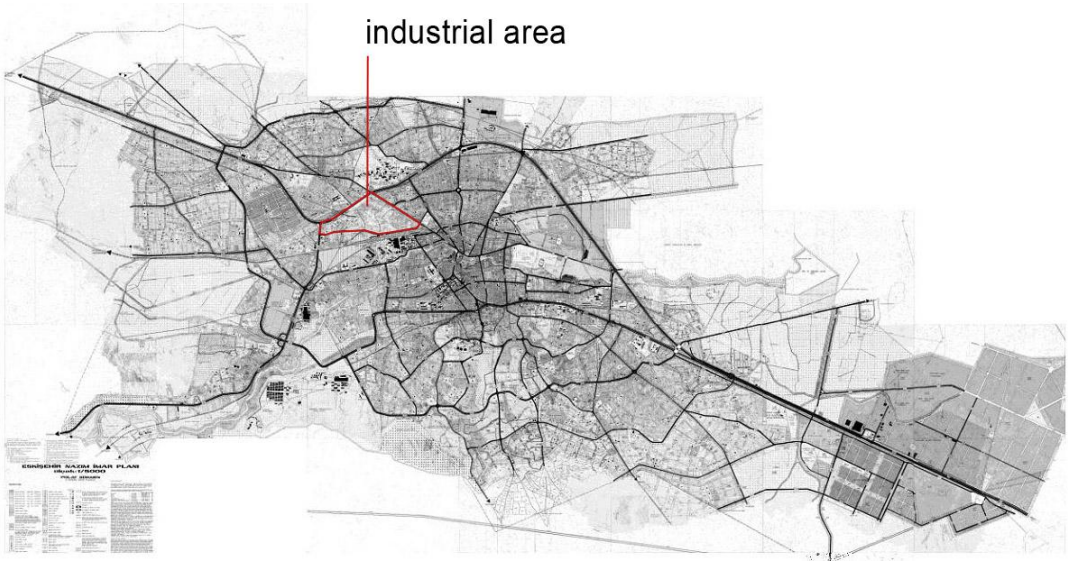


Figure 69: Development plan of Eskişehir in 1989 (Archive of the Eskişehir Büyükşehir Municipality)

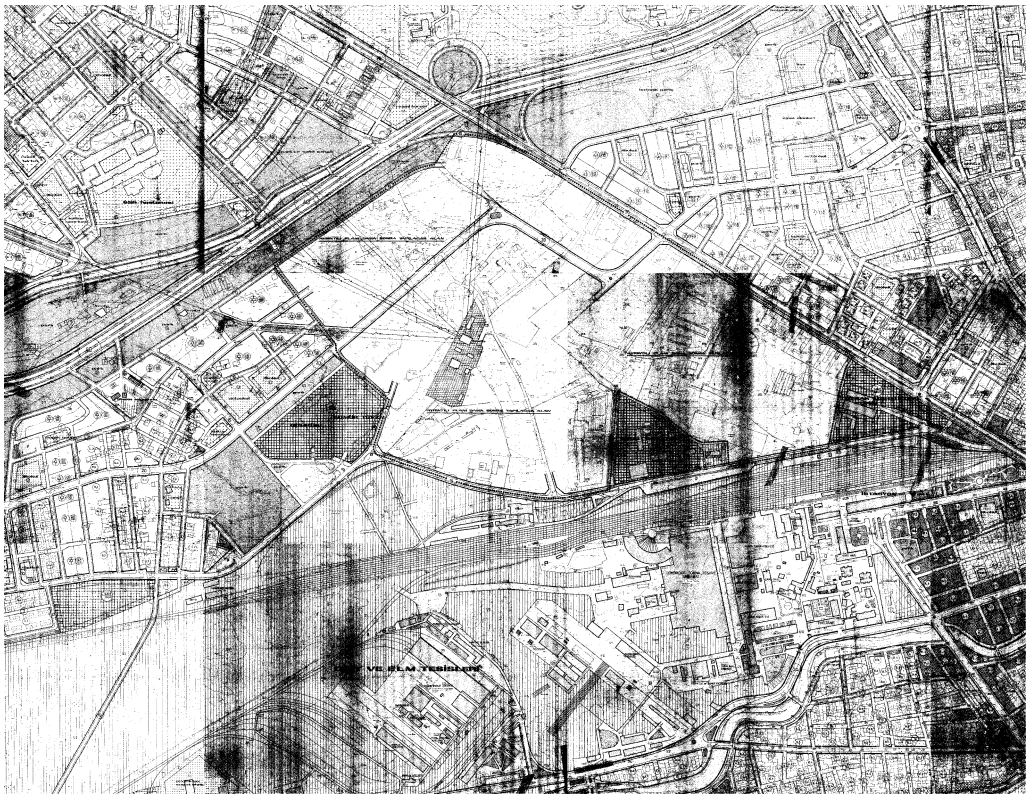


Figure 70: 1/1000 Development plan of Industrial Area in 1989 (Archive of the Eskişehir Büyükşehir Municipality)

1995 Plan: With the plan, the decision to divide parcels of the industrial complexes was started.[154] The areas of the Kılıçoğlu, Doğan, Kartal, Kurt Brick and Tile Factories with other industrial structures were planned as commercial areas. The Çift Kurt Tile Factory is indicated as business centre. In the industrial area, the landscape designs were allowed and the term of industrial heritage were not taken into consideration.

[154] The plan was done by the urban planner Kemal Sarp and in 03.05.1995, it was approved by the Eskişehir Büyükşehir Municipality. However it wasn't applied.

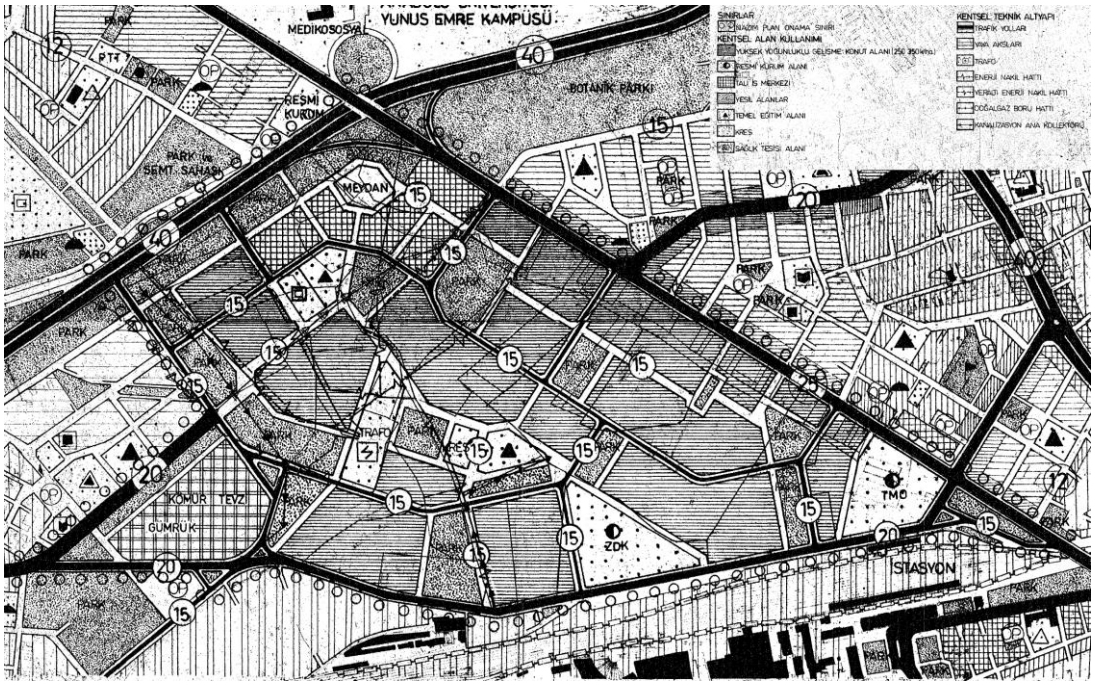


Figure 71: 1/5000 Development plan of Industrial Area in 1995 (Archive of the Eskişehir Büyükşehir Municipality)

1998 Plan: According to the plan, the decision to divide parcels of the industrial complexes was continued.[155] The Kılıçoğlu Tile Factory is shown as commercial and service area, the Doğan and Kartal Factories, as "the areas and structures must be conserved". The Çift Kurt and Kurt Factories were excluded from "the area that is presented to the cultural and natural heritage preservation board for conservation". In the industrial area, the landscape designs were allowed.

[155] The urban planner Oya Erişen prepared the plan of the city. In 16.09.1998, it was approved by the Municipality. However the plan was abolished in 03.08.1999.

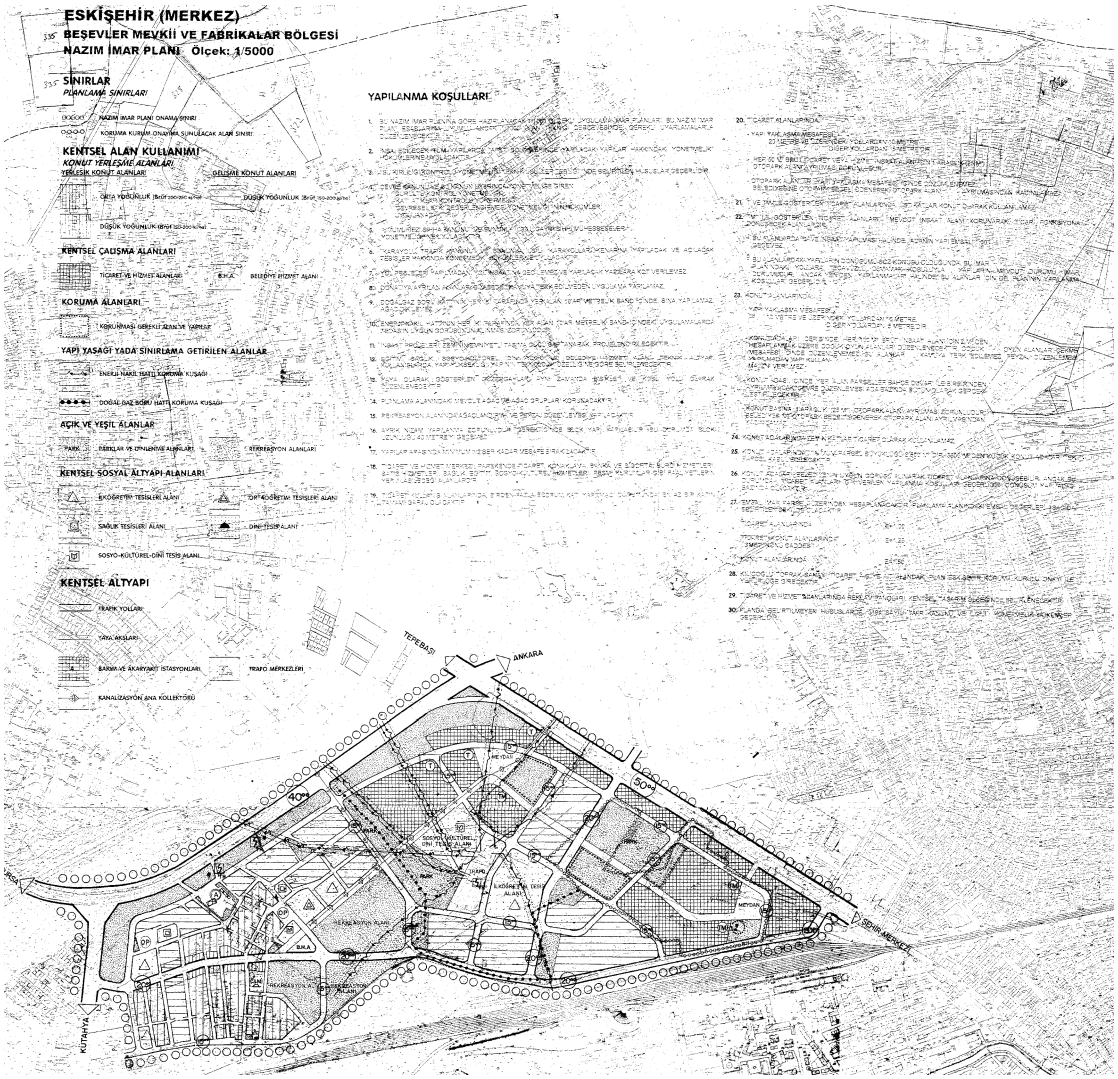


Figure 72: 1/5000 Development plan of Industrial Area in 1998 (Archive of the Eskişehir Büyükşehir Municipality)

2003 Plan: The 1/ 5000 scale Eskişehir Master Plan was approved in 26.07.2002 (article 13/91) by the decision of Eskişehir Municipality; in 15.08.2002, the plan went into effect. The plan was revisioned by the decision taken in 17. 10.2003 (12/83) and the decision was approved in 20.10.2003. In accordance to the Master Plan, the 1/1000 Development Plan for the factory district was prepared by the architect Polat Sökmen and approved in 11.12.2003.

Some of the structures in the area were registered according to the 14.08.2003 (190/2479) in 1/5000 Master Plan and 1/1000 Development Plan. So the registered structures should be evaluated through the legislation on the Immovable Cultural and Natural Assets.The parcellation is decided as principally appropriate by the Natural and Cultural Conservation Board.

The plan organized the industrial area as a second centre of commercial and socio-cultural activities.[156] According to the plan some use decisions were taken; Kılıçoğlu, Doğan, Kartal Brick and Tile Factories were planned as commercial areas and Çift Kurt Brick and Tile Factory is as tourism area. The Yasin Çakır Flour Factory, the Magnezit Factory, Eti Factory, TMO (Soil Products Office) Storage Buildings were decided as commercial areas and the Tire Rim Factory is as Private Health Centre.

According to the 2863& 3386 Act of Cultural and Natural Assets Conservation Act, Article 8; the natural and cultural conservation board is responsible for the construction of registered buildings and the search of the construction and installation. In Master Plan, the opinion of the Natural and Cultural Conservation Board should be taken. However in the plans, this process was not implemented.

The Article 18 that determined the structuring areas; the local governments should be adjusted to the decisions of the Conservation Board when an addition or construction are applied in the parcels. Besides; the parcels of the immovable cultural heritage should not be divided or united that damages the character of the site. The decisions were taken according to single building lot scale to increase density of restructuring. So the open areas of the complexes aren't determined as a whole. However the structures and open areas have a group value because of indicating the production process. According to Law on the Conservation of Cultural and Natural Property (2863), (14.07.2004 – 5226/9 art.) "The parcels of immovable cultural property to be protected can not be divided and combined in a way to affect the cost of the immovable cultural property."[157] So the term of industrial heritage and different types of industrial structures and complexes were not taken into consideration in the development plan.

[156] Eskişehir İmar Planı, 2003, Eskişehir Büyükşehir Municipality, *www.tepebasi.bel.tr/,* Eskişehir
[157] The Ministry of Culture and Tourism, The Law on the Conservation of Cultural and Natural Property, *http://www.kvmgm.gov.tr/belge/1-77085/eski2yeni.html,* accessed on September 14, 2011

Figure 73: 1/1000 Development plan of Industrial Area in 2003 (Archive of the Eskişehir Büyükşehir Municipality)

According to the Law on the Conservation of Cultural and Natural Property (2863) Article 17 (Amended: 14/07/2004 - 5226/8 art.) “The Municipalities, governorships and the relevant institutions shall hold meetings in the area with the participation of the relevant professional organisations, civil society organisations, and residents affected by the plan, have the conservation plan prepared, examined, finalized and submit it to the Regional Conservation Council.” However, the participation process in the industrial area was not managed.

The Turkish State Railways (TCDD), the Environment and Forestry Directorate and the owners of the factories contested the plan due to the roads passing through the immovable property of the parties that includes constructional and physical intervention. The plans were rejected by the Eskişehir Administrative Court in 26.11.2010.

After the plan, some projects were increased by the effect of the local authorities in the city. With the Eskişehir Tramway Project (Estram), the city started to change. Some streets were transformed to the pedestrian road and the routes of the buses and other transportation vehicles were replaced, the rehabilitation of the Porsuk River was performed. The physical character of the city was formed with these improvements.

2011 Plan: In 06.07.2011, the 1/1000 plan was approved by the Tepebaşı Municipality and in 14.07.2011 by the Eskişehir Büyükşehir Municipality. Then, the plan was accepted by Eskişehir Cultural and Natural Preservation Board in 28.07.2011. So the development plans in 1/1000 scale involving the urban design projects in factory district with the decision of the Natural and Cultural Preservation Board started. Thus, the 1/5000 Master Plans including the factory district and TCDD- Tülomsaş Conservation Areas had been developed. The small scale urban design projects for the determined areas on the plan has been started and continued. [158]

In the plan, the area is decided as multifunctional particularly based on commercial uses. The Kurt Factory is planned as urban service area; Çift Kurt as touristic and park area; Kılıçoğlu as commercial and park; Kartal as private health, commercial, recreative commercial; Doğan as commercial and park.

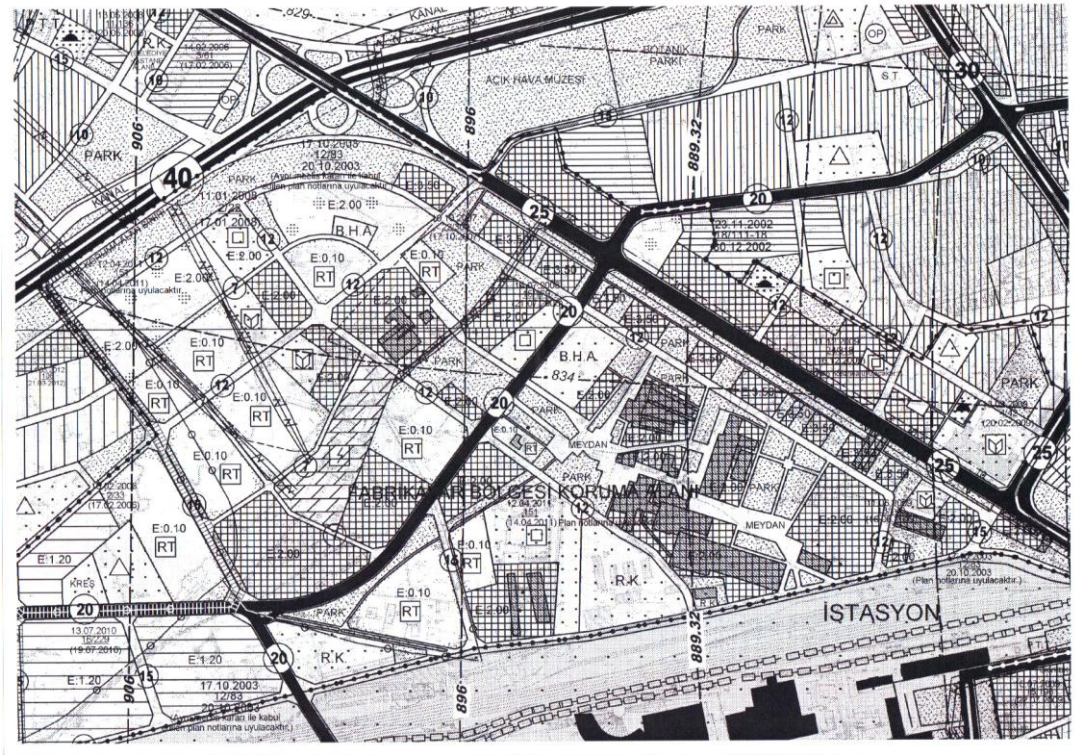


Figure 74: 1/5000 Master Plan in 2011 (Archive of the Eskişehir Büyükşehir Municipality)

[158] Eskişehir Tepebaşı Municipality, *http://www.tepebasi.bel.tr/,* accessed on August 5, 2011

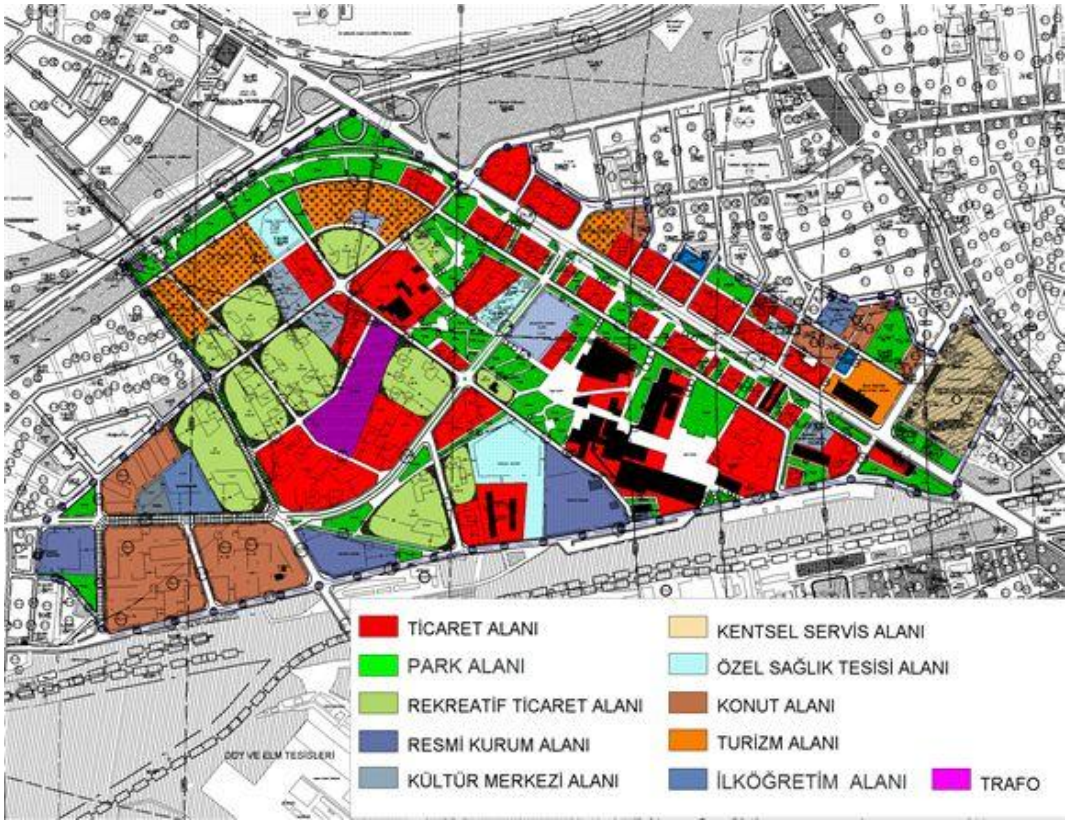


Figure 75: The Development Plan of the Industrial Area in 2011 (the plan is obtained from *http://www.tepebasi.bel.tr/tbyeni/haberler/ HaberDetay. aspx?haberId=1375,* accessed on 05 August, 2011)

The dereliction of the area with the lack of planning caused some problems. The conservation principle is not established and plans aimed construction. The plan has different characteristics than 2003 development plan according to the floor area ratio. Although the area should be planned according to the industrial heritage, the density of restructuring increased that is higher according to the other parts of the cities. In some areas; the floor area ratio is given more than other areas in the city; that indicates the decisions on the high density structuring rather than conservation . The floor area ratio in the one of the most used street of the city called Atatürk Street is 2,4. However in brick and tile areas, that are registered as cultural heritage, the floor area ratio is given as 2 and the areas parallel to the Factory Street is 3,5. Besides, the different floor heights are proposed for different areas. In some areas, the ratio is 0,10 that gives no opportunity to build a structure and in other 2,5 and 3,5. The plan is different from previous ones; the structuring is twice times higher and the social and technical infrastructure is decreased in %20.

The ownership status in the factory district is private and the owners try to conserve their ownership status on reuse process; that presents the urban development. In the establishment and transportation of the area the problems between the related parties were not appeared. With the development of the plans; the increased land values cause conflict of

interest between stakeholders, municipalities and private enterprises.

The planning progress has also some complications. The plan should decide the values and urban texture with reuse possibilities. The public interest is not included as in the 2003 development plan. In the process, the researches on the related subjects are not provided. The transportation approach in the plan is not sufficient that should be decided as integrated with the use proposals. The green areas is rarely planned due to increase the structuring in the area such as in Kılıçoğlu and Kurt.

3.3. The General Evaluation of the Brick and Tile Factories in Eskişehir

The urban identity of Eskişehir was changed with the establishment of Turkish Republic and became an industrialized city cause the formation of the social, physical and economic character. In time, the industrial buildings in the area were moved. So the buildings and complexes abondened and aren't used as industrial purposes, which causes the transformation or demolishment. Today, the area lost its industrial identity and the parcels have started to be divided to construct the shopping malls, office buildings, residences through the plans. And with the last developments the periphery of the factory district began to be a commercial and residential area with new buildings for the students due to the closeness to the Anadolu University. This new structuring increase in land values that cause to effect the use decisions of the factory district.

With establishment of the Republic, the policy of nation state was industrilization caused new structuring. As a part of the progress, Eskişehir was chosen for brick and tile production. In the 1950 aerial photograph which was analyzed in Chapter 3, many brick and kiln factories which have small scale Bulgarian kilns with additional structures are seen. In the 1975, with development of the production technology, the massive kiln buildings as chamber kilns were constructed by the removal of the some of the Bulgarian Kilns. The production type began to vary that indicates the continuation of the industrial development. After 1980 the factories started to be abandoned by the establishment of the organized industrial zone and the functional sustainability was obtained on a new area.

In 1974, there are 11 brick and tile factories in the area. However, today five of them can be seen which have different conservation status according to their structures, mechanical components, open areas and site boundaries. That is because of the the late registration date which was applied to the factories in 2003, after the demolishment of the structures and removal of the mechanical equipments and the plans are not adequate to obtain the conservation of the complexes.

The Kılıçoğlu brick and tile factory is the most conserved. The factories as well as

smokestacks, water tower, administration unit, storage building with mechanical components are still remaining; which gave information about production process and society. The components of the Kılıçoğlu complex was designed according to a plan and the factory 1 is a designed structure with Bauhaus characteristics. However, the site boundaries were divided and new buildings such as commercial and residential high buildings were constructed that cause the different perception according to the historic background of the site. Also in Çift Kurt; the original boundary of the site was divided into six part. And on other parcels commercial, residential buildings were constructed that indicates the economical value of the sites. In the area there is one example that obtains the transformation. The Kurt Factory was destroyed, four structures were reconstructed and a new building was designed as Espark Shopping Mall. The reason of this development is the demand for the construction of new structures and these interventions represent the approaches to the industrial heritage in the area by means of conservation and adaption of new buildings.

At present; kiln buildings, drying units and smokestacks are remained from the complexes of the factories in Kartal, Doğan and Çift Kurt Factory. However the physical conditions of the factories are different due to the destruction of the roof of the Kartal and Doğan Factories, that cause many physical deteriorations as dampness, powdering, material loss, macrobiological growth.

In the factories, three type of kilns as Hoffman, Tunnel and Zig Zags are seen, that obtains opportunity for the interpretation of the various production process and the plan schemes which are a significant source in understanding of the kiln technology.

On the destruction and damages on the industrial heritage; the development and master plans are the significant inputs. So in the evaluation of the factories it is essential to assess the plans. In the scope of the study; the planning activities which consists of the factory district in Eskişehir was analysed started from 1956; and after that eight plans were established. In the 2011 development and master plans the conservation of industrial heritage was not considered. The area was designed as a development area for new buildings. So the decisions are taken according to single building lot scale to increase density of restructuring. The area was divided according to the functions and the floor area ratio is given as highest in the city without considering the historical characteristics from the Early Republic, urban silouthette, values. However the structures and open areas of the industrial heritage were designed as a group from the beginning of the industrilization because of indicating the production process. Besides, the density of restructuring in every parcel is irrelevant with eachother that cause the disputes in the process. The conflict of interest between the stakeholders, private enterprises and local authorities were appeared in that point with the high land values of the area. Whereas, the planning should obtain cooperation between these parties, this issue is not included.

In the planning process; the participation in the industrial area wasn't managed. So the existence of brick and tile factories with the term of industrial heritage wasn't cognized by the residents and ignored by the municipalities and other authorities; that enables the unconscious planning developments.

The unefficient transportation approach irrilevant to the use proposals causes problems on the future of the area. Even though the conservation should be decided through the public interests, the public areas were not organized.

The industrial area was not declared as an archaeological site. However, the industrial buildings and their lots are registered and covers large areas, the area can be decided as an industrial archaeological area.

In conclusion; the late registration date causes the demolishment of the structures and removal of the brick and tile factories. The developments as building commercial and residential units around the area resulted in the increase in land values. Therefore; the brick and tile factories with their structures, mechanical elements, open areas and boundaries were not conserved due to the planning approaches of the authorities that aimed construction instead of conservation and irrelevance of the public to the subject.

CHAPTER 4

THE ASSESSMENT FOR BRICK AND TILE INDUSTRY IN ESKİŞEHİR

Eskişehir has a historical background for being an industrial city particularly with its brick and tile factories from the establishment of the Republic. This background represents the brick production with its own process, technology and building typology; that obtained values to the area and complexes. In this chapter, the value assessment for the brick and tile factories in the area is formed, which is based on Values of Cultural Heritage in Conservation defined in the theoretical framework in the first chapter. From the Alois Riegl in 1902, the definitions of the values have been defined. Many scholars as Jokiletho, Fielden, Tray, Mason determined values on the cultural heritage; however, the values on the industrial heritage were defined in the thesis of the Ayşem Kılınç and Gül Köksal. The structure of the value assessment were developed on the thesis of the Ayşem Kılınç. Hereby, the values are examined in two groups as urban and building scale. In the district, the brick and tile factories cover a significant area that cause to analyse the factories according to the urban scale. Previously, the values were arranged into three groups as intrinsic, extrinsic, and economic. The assessment is done according to this partition in both scales.

The problems and potantials are defined and swot analysis consists of strengths, weaknesses, opportunities and threats. The strengths and opportunities define the positive aspects that are formed by the values and potantials. The weaknesses and threats are the negative aspects that are resulted by the problems. The swot analysis is done in urban and building scale; ended with an evaluation of the chapter.

4.1. Values

4.1.1. Urban Scale

1. Intrinsic Values

a. Age and Historical Value: On the Early Republic Period (1923- 1950), one of the policy of the state was industrialization. Eskişehir was one of the cities that was chosen for this aim. The factory district was determined as an industrial area and the complexes started to be established in 1920's and continued rapidly after. The factories were built to modernize the society and not just to be a production complex, but for the development of the country's economy and social life. One of the main production type was brick and tile and their complexes still possess large areas. These are Kılıçoğlu Tile and Brick Factory (1926), Kurt Tile Factory (1928), Çift Kurt Tile Factory (1933), Aslan Tile Factory (1938), Fil Tile Factory (1942), Kartal Tile Factory (1944),

Doğan Tile Factory (1948), Güneş Tile Factory (1948). And all of the factories represent a precise time in history.

Figure 76: The Factory District between 1950 and 1975 (The Archive of Tepebaşı Municipality)

b. Technical/ Artistic Value: In the area, the industrial buildings were significant examples according to their production type. The factories provide different building types (kilns, drying units, mechanical units…) and constructed with structural systems, materials or techniques that were specific to brick and tile industry. The structures were constructed mainly by combination of concrete and brick. The reinforced concrete system, was the most advanced technology of the day, was not widely used in that period. They were mostly built within the limits of their period and do not stand out for their architectural qualities except for Kılıçoğlu Factory. The Factory 1 represents Neoclassic or Bauhaus effect with the columns arranges in a linear order on the East Elevation.

- Considering the mechanical equipment (production line, machinery of mould preparation, extruding machine, conveyor), only Kılıçoğlu Factory is preserved.

c. Authenticity Value: In the area, due to the transformation (Espark Avm, 222 Recreational Centre..) and not conserving the industrial buildings, the buildings and complexes have started to loss their original qualities in terms of design, construction technique, material, mechanical equipments. The structures generally remain as a core (Çift Kurt, Kartal, Doğan) and the mechanical equipments were removed that diminished their originality. Kılıçoğlu Factory is the most conserved complex in the area. The complexes generally conserve their original territories today.

d. Document Value: The indication of the state's approach in the Early Republic Period, production technique and the transformation of some

industrial structures obtain the area document value today. The industrial structures obtaining different production types such as brick and tile, flour, food, wine…, the structures and mechanical equipments are significant in understanding the production process. The brick factories with various kiln buildings (chamber, tunnel, zigzag) with legible plan schemes, service units and mechanical equipments, which are integrated together, are sources on the comprehension of the specific industrial characteristics.

2. Extrinsic Values

a. Symbolic Value: The factory district with its brick and tile factories is a symbol for development of industrialization and its cultural meaning, which have partially lost today due to the end of production. Especially, the Kılıçoğlu Factory is a prominent with its brick and tile production in Eskişehir and Turkey.

- The smokestacks have a symbolic value with their heights representing the district as an industrial area.

Figure 77: The aerial view of the factory district (*http://www.eskisehir.gov.tr/*, accessed on June 20, 2011)

b. Identity Value: The brick factories with other industrial structures provided Eskişehir an industrial city character, which were constituted by the government as a part of a political approach during the first decades of Turkish Republic. By the reason of the industrial structures and complexes, the area was entitled as “the factory district”. Eventually, the district and all of the industrial structures can be evaluated as having the identity value.

c. Commemorative value: The industrial structures with their open areas and service units were used by the workers that produce the public memory.

d. Aesthetic Value: In the area some of the structures still have aesthetic values referring to its design, material, form; such as Kılıçoğlu Factory. Other factories have machine aesthetics and decayed aesthetics due to the abandonment and transformation.

e. Rarity Value: The area can be a rare example in regional or national scale for brick and tile factories remaining together. However, the factories can not be determined as unique for their type in international scale except the Kılıçoğlu Complex.

f. Group Value: The industrial area is the integration of various production and service units, but particularly the brick and tile factories; hereby they can be assessed for having group value. In brick and tile factories, as a result of production process the structures and open areas were combined together to indicate the spatial order and hierarchy.

g. Educational Value: The structures and open areas, which are integrated together, indicate the production process and the legible plan schemes of the kiln buildings are significant sources that ensure educational value.

h. Sociocultural Value: With the establishment of the railway, the population of workers increased in the Early Republican Period. The working class started to settle around the railway. The factories, service buildings and open areas were parts of an industrial city from that period which indicates the culture, social and economic existence of a society; which provides sociocultural value. In the last years, with the transformation of the structures and areas to the shopping malls, recreational centres, residences, hotels... represent today's social life and culture that is formed by the globalization.

3. Economic Values

a. Use/ Functional Value: Due to the physical possibility, location, accessibility of the buildings and large open areas of the factories…; the factories have possibility to be functioned. The Çift Kurt Tile and Brick Factory used occasionally for the symposiums, circus. The Kurt Factory was transformed into the shopping mall and cafes.

Figure 78: The view from the circus in the Çift Kurt Tile Factory (author, March 2011)

Other industrial buildings were transformed such as Aral Wine Factory to Hayal Kahvesi, Lumber Factory to the 222 Recreational Centre, Tire Rim Factory to Recreational Centres; the Flour Factory to the Hotel…

Figure 79: The transformation examples in the area a) The Wine Factory to Hayal Kahve (author, March 2010) b) The aerial view of the Flour Factory to İbis Hotel (*http://www.eskisehir.gov.tr/*, accessed on June 20, 2011)

b. Market Value: The site of the factories obtain high land prices owing to have easy transport facilities (public transportation), be in the city centre (be close to the university obtain easy access of students) and be in the industrial area where has started to be commercially reused. The areas are valuable; thus, some of the industrial buildings were demolished such as the registered Mühendisler Floor Factory to construct the Özdilek Shopping Mall.

Figure 80: a) The Mühendisler Flour Factory, 1953 (The Archive of Tepebaşı Municipality) **b)** Özdilek Shopping Mall after demolishment (author, March 2012)

c. Continuity in Use: The continual uses of the factories are not allowed due to the plan decisions of the municipality. However as declared above the transformation of the structures or complexes can be seen.

4.1.2. Building Scale

The values of the brick and tile factories are determined separately.

4.1.2.1. Kılıçoğlu Brick and Tile Factory

1. Intrinsic Values

a. Age and Historical Value: The Kılıçoğlu Factory, which was established in 1927 by Bulgar Çirkof Kardeşler (at that time called Aslan Factory and name changed in 1949), was the first brick and tile factory in Eskişehir. The factory buildings with other structures in the complex have been a representative example of Early Republic Period.

Figure 81: The Kılıçoğlu Brick and Tile Factory, 1927 (The Archive of Tepebaşı Municipality)

- The First Kiln in Eskişehir, which produced the in situ bricks, contains historical value.
- The Kılıçoğlu Factory was the first to produce the marseilles tile in Turkey.
- The smokestack 4 determined in the inventory no:4 was the first smokestack constructed within the brick and tile factories in Eskişehir.

Figure 82: The smokestack 4 in the Factory (Nalbant, 2004)

b. Technical/ Artistic Value: The site of the factory is an entirely designed area with respect to the plan, form, location of the factories, service units (mansion, storage building, carpenter shop...) and open areas.[159] The factory 1 and 2 were planned close to each other by location according to their production process.

The complex consists of the long span factories and service buildings constructed with different architectural techniques due to the construction dates, material, architect. The Factory 1 was constructed in reinforced concrete system and brick masonry. Concrete system used in the buildings was not a very common construction system in Eskişehir in 1940's. It was one of the first buildings constructed with this system rising among the buildings constructed in solid masonry system. The factory could be decided as a structure represented the period characteristics; however the east elevation possesses Neo-classical elements which was common in the

[159] The factory was designed by Robert Aebi and Cieag (ZiegeletechnBureau) in 1949. Factory 3 was designed by Aydın Boysan.

Middle Europe.[160] At the same time, the Bauhaus style can be seen.[161] The elevation is two storey height, combination of the concrete and brick masonry construction systems. 10 square formed columns arranged in a linear order, over the columns a thin capital, beam and eave which indicates the characteristics of an architrave. Inside the elevation, there are projected architectural elements with framed borders on the wall. In the middle the door was opened late periods.[162]


Figure 83: a) The East Elevation of Factory Building 1 (author, March 2010) **b)** The East Elevation of Factory Building 1 (Nalbant, 2004)

- The factory building 3 was constructed in a later period without any architectural relation to the others.

[160] "Neo-Classical architecture: is a new birth of the classical architecture of ancient Greece and Rome. A Neoclassical building is likely to have these features: symmetrical shape, tall columns that rise the full height of the building, triangular pediment and a domed roof."
"Neo-Classical Architecture", *http://www.architecture411.com/notes/note.php?id_note=6,* accessed on March 20, 2012
[161] "Bauhaus architecture: Contemporary German architecture set its main trends in the first thirty years of the 20th century. The strongest influences came from Weimar and Dessau, where the Bauhaus school was founded in 1919. Bauhaus architecture is a mixture of cubism and modernism that united architects all across the globe,
represented just that: modern ideas with function and form. Buildings constructed from the Bauhaus design are always cubic in shape. They feature four flat sides as well as flat roof tops. The colors of the typical Bauhaus building are generally black, white, grey or sometimes beige. The interior of the home or building reflects a functional, open floor plan."
Gittens, Jennifer, "Modernism in Bauhaus Architecture: Cubic Buildings that Offer Form and Function through Simple Style ", *http://jennifer-gittins.suite101.com/modernism-in-bauhaus-architecture-a119313#ixzz1q8TibuZA,* accessed on March 20, 2012
[162] Madran, E., Nalbant, K., Özgönül, N., 2006, "Eskisehir, Kılıçoglu Tugla ve Kiremit Fabrikası", *Bülten*, Dosya 03, Sayı: 45, pp.60-67

Figure 84: a) The Factory Building 3 on the North (Nalbant, 2004) **b)** The Factory Building 3 on the East (author, March 2012)

- The mechanical equipments such as production line, machinery of mould preparation, extruding machine, conveyor, keller drying were conserved since 1947.

Figure 85: a) The machinery of mould preparation (Nalbant, 2004) **b)** The Conveyor (Nalbant, 2004)

- The narrow gauge railway, which continues inside the factory, provides the train to enter the structure.
- Not only buildings but also open spaces were designed in general plan of the complex. Planting the trees and the paved ground were done in plan with building designs.

c. Authenticity Value: From 1947, Kılıçoğlu factory maintains its original qualities in terms of design, construction technique, material, mechanical equipments and landscape elements. The plan schemes and facade organizations were conserved, except additions to the North Elevation of the Factory 1, some service buildings such as storage building, vehicle maintenance atelier, carpenter shop.

- The complex almost conserves its original boundary today.

- There are authentic elements on the open area such as the trees, which were planted by the plan of the site and the original pavement in the entrance gate.

Figure 86: The pavement on the entrance gate (author, March 2010)

d. Document Value: The buildings and complex are significant sources in understanding the production process and sociocultural existence of a community.

2. Extrinsic Values

a. Symbolic Value: The complex with its construction technique, material, technology is a symbol of Early Republic Period.

b. Identity Value: The structures in the complex and the factory with other brick and industrial factories have provided Eskişehir an industrial city character.

- The factory has a significant identity, because the tile and brick production in Eskişehir and Turkey are referred with "Kılıçoğlu" brand.

c. Commemorative value: The industrial structures with their open areas and service units were used by the workers that produce the public memory can still be seen.

d. Aesthetic Value: The Kılıçoğlu Factory with combination of its structures and landscape has aesthetic values referring to its design, material, form… The East Elevation of Factory 1 is an example of design of a place.

- Using the material of the factory in columns located in the entrance gate gives the clue of the area. Main gate surrounded by the row of trees are other aesthetic values.


Figure 87: a) The Entrance Gate on the North (*http://www.eskisehir.gov.tr/*, accessed on June 20, 2011)**b)** The Entrance Gate on the South (Nalbant, 2004)

e. Rarity Value: Owing to the structures indicating the production process, construction date, architect of the structures; they have rarity value.

- The factory was the most conserved brick and tile factory in Eskişehir.
- The Kılıçoğlu Factory, which was established in 1927, was the first brick and tile factory in Eskişehir.
- East Elevation of Factory 1 is unique.
- The smokestack 4 was the first smokestack constructed within the brick and tile factories in Eskişehir.
- The Factory 3 is the last building constructed by the Architect Aydın Boysan.
- It was the only factory that the narrow gauge railway continues inside the factory.

f. Group Value: The building is located in the industrial area where is the combination of various production and service units, but particularly the brick and tile factories.

- So as to represent the production process the structures in the complex were designed consciously in the same period and designer as a whole to indicate the spatial order and hierarchy of the buildings and open spaces.

Figure 88: The Aerial Photograph Of Kılıçoğlu Factory (*http://www.eskisehir.gov.tr/*, accessed on June 20, 2011)

g. Educational Value: The structures and open areas, which are integrated together, indicate the production process and the legible plan schemes of the kiln buildings are significant sources, that ensure educational value.

h. Sociocultural Value: The complex was a part of an industrial city from the establishment of the Republic Period and indicates the culture of a society. Working conditions and social buildings offered a different life style.

3. Economic Values

a. Use/ Functional Value: Due to the physical possibility, location, accessibility of the buildings and a large site of the factory... ; the complex have possibility to be functioned.

b. Market Value: The site of the factory obtain high land price owing to be in the city centre and be in the industrial area where has started to be commercially reused.

c. Continuity in Use: The factory is vacant due to the plan decisions of the municipality.

4.1.2.2. Çift Kurt Brick and Tile Factory

1. Intrinsic Values

a. Age and Historical Value: The factory was established in 1933. The structures such as kiln building constructed in 1957 and smokestacks are still remaining which represent the Early Republican Period.

b. Technical/ Artistic Value: The kiln building is a long span structure constructed with the reinforced concrete system since 1950 and has a vault system which is not a common technique for the brick and tile factories in Eskişehir.

Figure 89: The vault system of the factory (author, March 2010)

- The plan scheme of the kiln building is different due to have double chambers.
- Even though all of the mechanical equipments (presses, moulding machines...) were transferred to the new factory; the stoke holes and damper holes can be seen.

c. Authenticity Value: The kiln building and smokestacks have been conserved since 1957.

d. Document Value: The building is a rare example with having a double hoffman kiln plan scheme which is a significant source in understanding the production process. Although many structures (Bulgarian kilns, mechanical units, drying units, smokestacks) were destroyed, the photographs of the factory and aerial images gave information about the production process and Bulgarian kilns.

Figure 90: The Bulgarian Kilns (The Archive of Çift Kurt Brick and Tile Factory

2. Extrinsic Values

a. Symbolic Value: The complex with its construction technique, material, technology is a symbol of Early Republic Period.

b. Identity Value: The structure with other brick and industrial factories has provided Eskişehir a industrial city character.

c. Commemorative value: The industrial structures with their open areas and service units were used by the workers; however these can be seen partially today.

d. Aesthetic Value: This value was defined as a conscious design of a place due to its form, material colour... The factory is a vaulted structure, which can be evaluated as an aesthetic value and has machine aesthetics.

e. Rarity Value: Owing to the form and plan scheme, the factory is a rare example in the area.

f. Group Value: The building is located in the industrial area where is the combination of various production and service units, but particularly the brick and tile factories. However, in complex scale, the group value couldn't be mentioned; because of that many structures (Bulgarian kilns, drying units, mechanical units) were demolished.

g. Educational Value: The structure contains data about the production process, construction technique and material**.**

h. Sociocultural Value: The structure and area evokes a culture of a society and period by historical photographs and its existence.

3. Economic Values

a. Use/ Functional Value: The open area of the building has been used for the Terracotta Symposium five times between 2001- 2011 and used for circus area in 2011.The structures and area have possibility to be refunctioned; by the reason of the physical possibility, location, accessibility…

Figure 91: The International Eskişehir Terra-cotta Symposium (The Archive of Tepebaşı Municipality)

b. Market Value: The site is in a significant area enclosed by the industrial buildings which were transformed into new uses that provides economical interests; for instance, 222 recreation centre, Hayal Kahvesi and Espark Shopping Mall. Therefore, the site is under the pressure of the high land values.

c. Continuity in Use: The factory is vacant, the temporary use can be offered in some periods due to the location of the site.

4.1.2.3. Doğan Brick and Tile Factory

1. Intrinsic Values

a. Age and Historical Value: The complex was constructed in 1940 has been an example of the first production factories on the Early Republic Period.

b. Technical/ Artistic Value: The kiln buildings are long span structures, which are combination of concrete and masonry system (ground floor stone masonry and first floor reinforced concrete with brick infill) which is an unusual construction technique for the structures in 1950's.

Figure 92: a) The Kiln Building 1 on the North (author, November 2011) **b)** The Kiln Building 2 on the South (author, November 2011)

c. Authenticity Value: The drying units since 1940's; kiln building, mechanical unit and smokestacks have been conserved since 1950's.

- The complex retains its original site boundary.

d. Document Value: The kiln buildings with having chamber kiln plan scheme and combination with other structures such as mechanical and drying unit in the complex are significant sources in understanding the brick production technology.

2. Extrinsic Values

a. Symbolic Value: The complex with its construction technique, material, technology is a symbol of the Republic Period.

b. Identity Value: The industrial identity of the city was derived from the complex with other brick and tile factories.

c. Commemorative value: The industrial structures with their open areas and service units were used by the workers; however these can be seen partially today.

d. Aesthetic Value: As an aesthetic value, the factory contains machine aesthetic.

e. Rarity Value: Due to the type of the structure according to the production process, construction date, the factory is worth to be preserved.

f. Group Value: Because of being in the industrial area where the brick and tile factories with other production and service units, the complex possesses group value.

g. Educational Value: The structure as other brick and tile factories contains data about the brick and tile production process and building system.

h. Sociocultural Value: The building was a part of an industrial city from the establishment of the Republic Period and indicates the living of a society that can be seen by the aerial photographs and written documents.

3. Economic Values

a. Use/ Functional Value: The container of a taxi stand used the North part of area without permission. In 27.07.2011, the removal decision against the unauthorized use of the site by the container of a taxi stand was taken which caused the attention of the municipality. The structures and area have possibility to be reused; by the reason of the physical possibility, location, accessibility...

Figure 93: The Taxi Stand located on the Northwest of the site (author, March 2010)

b. Market Value: The site is near to the Tepebaşı Municipality, commercial, residential units that obtain high land prices to the factory district.

c. Continuity in Use: The factory is vacant due to the plan decisions of the municipality.

4.1.2.4. Kartal Brick and Tile Factory

1. Intrinsic Values

a. Age and Historical Value: The complex was constructed in 1948 is one of the first industrial structures established in Eskişehir.

b. Technical/ Artistic Value: The kiln building 1 is a long span structure, which is combination of concrete and masonry system (ground floor stone masonry and first floor reinforced concrete with brick infill). Its construction system is not an used building technique in its time.

Figure 94: a) The Kiln Building 1 on the East (author, March 2010) **b)** The Kiln Building 2 on the West (author, March 2010)

c. Authenticity Value: The kiln buildings and smokestacks were conserved since 1950's.

- The complex almost conserves its original boundary today.

d. Document Value: Altough the kiln buildings were destroyed, they obtain information about the production process with chamber kiln plan schemes.

2. Extrinsic Values

The factory has similar extrinsic values as Çift Kurt and Doğan Factories, which are symbolic, identity, aesthetic, rarity, group, educational and sociocultural value.

3. Economic Values

a. Use/ Functional Value: The structures and area have possibility to be

reused; by the reason of the physical possibility, location, accessibility...

b. Market Value: The site obtains high land prices as other brick and tile factories in the area.

c. Continuity in Use: The factory is vacant due to the plan decisions of the municipality.

4.1.2.5. Kurt Brick and Tile Factory (Today Espark Shopping Mall)

1. Intrinsic Values

a. Age and Historical Value: The building had been an example of the first production factories on the Early Republic Period until the construction of the Espark Shopping Mall in 2006.

b. Technical/ Artistic Value: The three of the smokestacks and additional units were reconstructed in the same places with new brick material. The smokestack 1 is replaced and reconstructed. The structures in the factory were not conserved; however reconstructed in their same place as a symbol of brick and tile production.

Figure 95: a) The Exhibition Unit with smokestacks 5 and 6 on the West(author, March 2012)
b) The Commercial Unit on the South (author, March 2012)

c. Authenticity Value: The site boundary was retained since 1950.

d. Document Value: The area was a transformation example of an industrial area.

2. Extrinsic Values

a. Symbolic Value: The reconstructed structures were built in their same places symbolically.

b. Identity Value: The structure with other brick and industrial factories had been provided Eskişehir an industrial city character.

c. Sociocultural Value: The complex had been a part of an industrial city that indicated the culture of a society; but today only by the reconstructed smokestacks and additional units, the industrial complex character can be realized. Owing to the transformation, the area has a sociocultural character that represents the transition from an industrial area to commercial and recreational area derived from globalization.

3. Economic Values

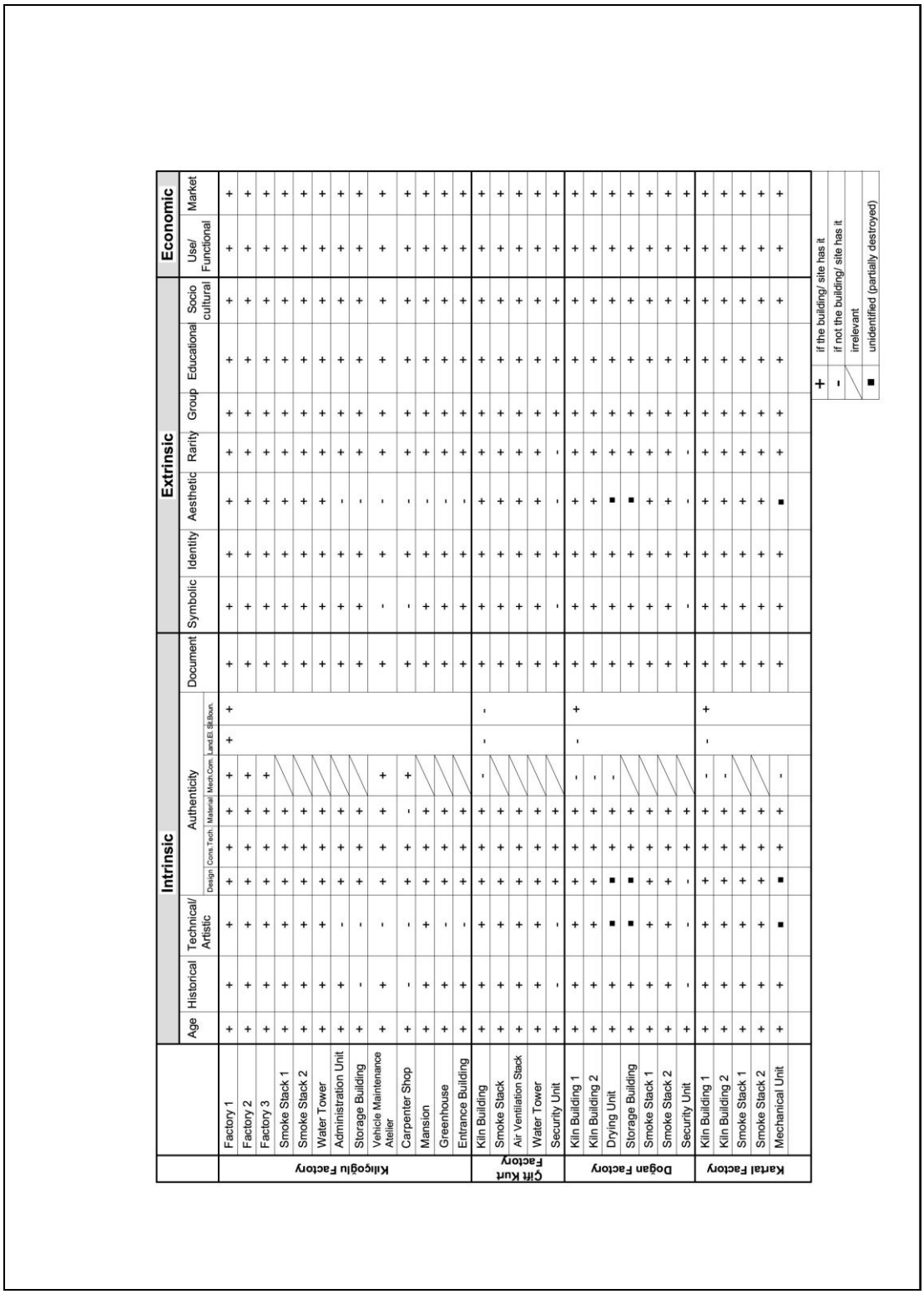
a. Use/ Functional Value: The new building is used as shopping mall and three reconstruction buildings as café. The open area is used as autopark and public space.

b. Market Value: The area was transformed; because of the high land prices. The kiln buildings, drying units and smokestack were destroyed to use the area more profitable and construct a commercial centre.

c. Continuity in Use: The factory is vacant due to the plan decisions of the municipality.

The charts below indicate the value types that each brick and tile factory owns. Every structure in the sites are marked according to their values. The type of value is marked with a "**+**" if the building has it or with a "**-**" if not. The "/" indicates irrelevancy; for instance mechanical components can not be located in the mansion or administration building. The unidentified elements are represented by " ■". As on the partially destroyed structures; technical/ artistic value can not be understood.

Table 32: The Assessment Chart for the Brick and Tile Factories



		Intrinsic									Extrinsic					Economic	
		Age	Historical	Technical/ Artistic	Authenticity					Document	Symbolic	Identity	Aesthetic	Rarity	Group	Educational	Socio cultural	Use/ Functional	Market
					Design	Cons.Tech.	Material	Mech.Com.	Land.El.	Bl.Boun.									
Kiliçoğlu Factory	Factory 1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	Factory 2	+	+	+	+	+	+	+			+	+	+	+	+	+	+	+	+
	Factory 3	+	+	+	+	+	+	+			+	+	+	+	+	+	+	+	+
	Smoke Stack 1	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Smoke Stack 2	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Water Tower	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Administration Unit	+	+	-	+	+	+				+	+	-	+	+	+	+	+	+
	Storage Building	+	-	-	+	+	+				+	+	-	+	+	+	+	+	+
	Vehicle Maintenance Atelier	+	+	-	+	+	+	+			+	-	+	-	+	+	+	+	+
	Carpenter Shop	+	-	-	+	+	-	+			+	-	+	-	+	+	+	+	+
	Mansion	+	+	+	+	+	+				+	+	+	-	+	+	+	+	+
	Greenhouse	+	+	-	+	+	+				+	+	+	-	+	+	+	+	+
	Entrance Building	+	+	-	+	+	+				+	+	+	-	+	+	+	+	+
Çift Kule Factory	Kiln Building	+	+	+	+	+	+	-		-	+	+	+	+	+	+	+	+	+
	Smoke Stack	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Air Ventilation Stack	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Water Tower	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Security Unit	+	-	-	+	+	+				+	+	-	-	+	+	+	+	+
Doğan Factory	Kiln Building 1	+	+	+	+	+	+	-		+	+	+	+	+	+	+	+	+	+
	Kiln Building 2	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Drying Unit	+	+	■	■	+	+	-			+	+	■	+	+	+	+	+	+
	Storage Building	+	+	■	■	+	+				+	+	■	+	+	+	+	+	+
	Smoke Stack 1	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Smoke Stack 2	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Security Unit	+	-	-	-	+	+				+	+	-	-	+	+	+	+	+
Karal Factory	Kiln Building 1	+	+	+	+	+	+	-		+	+	+	+	+	+	+	+	+	+
	Kiln Building 2	+	+	+	+	+	+	-			+	+	+	+	+	+	+	+	+
	Smoke Stack 1	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Smoke Stack 2	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+
	Mechanical Unit	+	+	■	■	+	-				+	+	■	+	+	+	+	+	+

+	if the building/ site has it
-	if not the building/ site has it
/	irrelevant
■	unidentified (partially destroyed)

Table 33: The Assessment Chart for the Brick and Tile Factories

		Intrinsic								Extrinsic						Economic	
		Age	Historical	Technical/ Aesthetic	Authenticity				Document	Symbolic	Identity	Aesthetic	Rarity	Group	Educational	Socio cultural	Use/ Functional	Market
					Design	Cons.Tech.	Material	Medi.Com.	Land.Ei. Sit.Boun.									
Kurt Factory	Shopping Mall	-	-	-	-	-	-		-	+	-	-	-	-	+	+	+	+
	Exhibition Building	-	-	-	-	-	-		+	+	-	-	-	-	+	+	+	+
	Commercial Building 1	-	-	-	-	-	-		+	+	-	-	-	-	+	+	+	+
	Commercial Building 2	-	-	-	-	-	-		+	+	-	-	-	-	+	+	+	+
	Smoke Stack 1	-	-	+	-	-	-		+	+	-	-	+	-	+	+	+	+
	Smoke Stack 2	-	-	+	-	-	-		+	+	-	-	+	-	+	+	+	+
	Smoke Stack 3	-	-	+	-	-	-		+	+	-	-	+	-	+	+	+	+
	Smoke Stack 4	-	-	+	-	-	-		+	+	-	-	+	-	+	+	+	+

4.2. Problems

4.2.1. Urban Scale

- The unconscious approach of 2011 development and master plan by the municipality and the cultural and natural heritage preservation board have not considered the structures and open areas as industrial heritage, which was defined comprehensively in the evaluation of the planning and conservation activities in the Chapter 3. Due to the plan decisions that intended to end the industrial activities in the area caused to the division of the sites, destruction of many structures in the factories and removal of mechanical equipments. The structures such as Bulgarian Kilns had already destroyed because of the improvement of the production technology. Therefore, the identity of the area could not be realized. Especially, some of the smokestacks that provide symbolic value of the area were damaged by the physical deterioration or consciously. In the process of planning, the public awareness and participation were not provided. So in the plan, the public use areas were not designed adequately.
- The factories and complexes became abandoned due to the decision of the municipality, therefore the industrial area has lost its identity and became out of use.
- The industrial buildings have started to be transformed into new uses that provide economical interests. (222, Buda, Hayal Kahvesi…) According to the 2011 plan; Kılıçoğlu, Doğan, Kartal Brick and Tile Factories are planned as commercial areas and Çift Kurt Brick and Tile Factory is as commercial and tourism area. The Kurt Factory was transformed into the shopping mall and commercial areas. Thus, the site was under the pressure of the high land values; so the sites were divided and started to be demolished or reconstructed.
- Unconscious approach of the municipality and the cultural and natural heritage preservation board can be seen in the transformation examples, thus these interventions can damage the character of the structures.
- The land values increased in the recent years, so the building owners are opposed to the municipality and private enterprises appeared for the use of the area. These reasons caused conflict of the interest.

4.2.2. Building Scale

4.2.2.1. Kılıçoğlu Brick and Tile Factory

- In Kılıçoğlu Factory, the new structures were added to the area in 1980's, which can prevent the perception of the complex. (storage, garage, carpenter shop). Due to the additions that were constructed on the North Elevation of the Factory Building 1, the building could not be percepted.


Figure 96: a) The Carpenter Shop (Nalbant, 2004) **b)** The Storage Building(author, March 2010)


Figure 97: The smokestack 2 (Nalbant, 2004)

- The smokestack 2 was demolished to the lower levels.
- Some of the mechanical elements in the factory 1 were removed.
- After abandonment of the factory, the factory 3 had been continued its production; however today the factory is not used.
- Unconscious approach of the municipality and the cultural and natural heritage preservation board can damage the character of the site and structures.
- The building owners are opposed to the municipality for the use of the area, which prevents the use or transformation of the area. Due to this conflict, the entrance to the site is not allowed.
- The site of the complex covers a large area, which makes the factory's land value higher owing to the economical interests. In the 2011 development plan, the site was divided into parcels to increase the floor space area, which is not adequate to the conservation of the industrial heritage. The parcels were decided as park and commercial areas. That indicates the lack of considering characteristics of the structures, mechanical equipments and open areas. The cooperation between building owners and local authorities were not obtained.The public awareness on the conservation of the buildings in the planning process is not efficient.

4.2.2.2. Çift Kurt Brick and Tile Factory

- Many structures (Bulgarian kilns, mechanical units, drying units, smokestacks) were destroyed.
- Some parts of the kiln building are closed by the brick walls which prevents the

perception of the space.

- The mechanical equipments of the kiln building were transported to the new factory in 2007. Therefore, the production process could not be realized. The factory lost its identity due to the demolishment of structures and removal of mechanical equipment, which indicates the production process.
- The structure has some physical deteriorations and basic maintenance problems. Powdering, material loss on the wall of the kiln building, dampness rising from the ground on the smokestack and the cracks on the exterior of the vault can be seen.

Figure 98: a) Dampness rising from the ground on the smokestack (author, March 2010) **b)** The cracks on the exterior of the vault on the Kiln Building (author, March 2010)

- The perception of the kiln building is prevented by the billboards that surround the outer walls of the area.
- The lack of security cause to the destruction of the homeless people.
- After abandonment of the factory in 1997 owing to the decision of the municipality, the area became out of use.
- On the opposite of the site; 222 recreation centre, Hayal Kahvesi and Espark Shopping Mall are located that causes the area to be transformed into new uses. So the area located in an central position that increased pressures on site.
- In 1996, the site of the factory was divided into four. On the South part sport area and residential buildings were splitted. The Eldem Residence and commercial units under the residence, residential buildings on the West part of the site were seperated in 2003. The original boundary of the site was changed that decreased identity of the site. The 2003 development plan with commercial and residential uses destroyed the integrity of the factory. In the 2011 development plan, the area is decided to divide into two parcels for tourism facilities. The unconscious approach of

the municipality and the cultural and natural heritage preservation board can damage the character of the building. The site has three landowners that can also cause some conflicts in the transformation. The public awareness on the conservation of the buildings in the planning process is not efficient.

4.2.2.3. Doğan Brick and Tile Factory

- Many structures (Bulgarian kilns, drying units, smokestacks) were demolished and existing structures are partially destroyed.
- The mechanical equipments of the kiln building were removed. Therefore, the production process could not be realized. The factory lost its identity due to the demolishment of the structures and removal of mechanical equipment.
- Some part of the chamber kiln 1 and 2 were demolished that caused physical deterioration. The roof of the kiln buildings were demolished that causes the physical deterioration; such as dampness, powdering, material loss, macrobiological growth. The structure of stacks are weakened by the cracks and dampness.

Figure 99: The dampness problem in the interiod of the Kiln Building 2 (author, November 2011)

- As other brick and tile factories, the site is under the pressure of the high land values due to the transformation of areas and being in industrial area. The site is enclosed by the industrial buildings, which have started to be transformed into new uses that provide economical interests (222 recreation centre, Hayal Kahvesi, Budha…) So the site is under the pressure of the high land values and private investors.
- The area of the factory is determined to separate into two parcels to increase the floor area ratio. The new functions are commercial and park. Unconscious approach of the municipality and the cultural and natural heritage preservation board can damage the character of the building. The cooperation between building owners and

local authorities were not obtained. The public awareness on the conservation of the buildings in the planning process is not efficient.

- The site provides hard pedestrian access to the buildings and vehicle access by a side road.

4.2.2.4. Kartal Brick and Tile Factory

- Many structures (Bulgarian Kilns, drying units) were demolished and existing structures are partially destroyed. The mechanical equipments were removed.
- The roof of the kiln buildings are demolished that causes the physical deteriorations; such as dampness, powdering, material loss, macrobiological growth. The balance of the structures are decreased because of the demolished parts and the disintegration of the binding material and that cause the destruction on the upper parts of the vaults and walls. The structure of stacks are weakened by the cracks and dampness.

Figure 100: a) Demolishment of the roof and some parts of the exterior walls in the Kiln Building 1 (author, March 2010) **b)** Destruction on the upper parts of the vaults and walls in the Kiln Building 2 (author, March 2010) **c)** Dampness rising from the ground on the smokestack (author, March 2010)

- Some of the buildings in the complex indicating the lifestyle of a society has been lost.
- After abandonment of these factories and complexes due to the decision of the municipality, the area became out of use. Today, the planning approach of the municipality and the cultural and natural heritage preservation board can damage the character of the buildings.
- The area is under the pressure of the high land values due to the transformations in the district.
- The site provides hard pedestrian and vehicle access by a side road.
- With the 2011 development plan, the area decided to divide into three parcels to increase the floor area ratio. The functions are determined as private health centre,

commercial and recreative commercial facilities without considering the values of the cultural heritage.

4.2.2.5. Kurt Brick and Tile Factory (Today Espark Shopping Mall)

- Many structures (Bulgarian Kilns, kilns, drying units, mechanical units) were demolished and buildings, smokestacks were reconstructed. So, the historic character of site couldn't be percept. The smoke stack 5 was replaced which caused wrong information about the site.
- The construction system and material of the structures were lost due to the demolishment and reconstruction.
- The interventions had not been done according to the fundamental principles of conservation, so the production process could not been understood. The factory lost its authentic value due to the demolishment of the structures and removal of mechanical equipment.
- The reconstructed buildings and smokestacks were registered.
- Today, the public awareness on the demolishment of the structures, which indicates the culture of a society with the transformation of the area, is not efficient.
- By reason of unconscious approach of the municipality and the cultural and natural heritage preservation board; the values was not been examined. New function of the building and open area was not been determined according to the values and conservation principles. The industrial buildings were demolished for commercial uses. The nearby environment and relation with it was not considered.
- The site is on a focal point enclosed by the industrial buildings, which have started to be transformed into new uses that provide economical interests. The site was under the pressure of the high land values, so the buildings were demolished or reconstructed.

4.3. Potentials

4.3.1. Urban Scale

- The brick and tile factories with other production units provide the area its industrial characteristics.
- The industrial structures, mechanical equipments and open areas are a part of production process and indication of a society should be conserved. These components, which cover a large area in the site, are significant to understand the progress of the city and urban identity.
- The structures and open areas with large spaces in the complexes have possibility to re-use. The area being in the centre have easy transportation possibilities.
- Some of the buildings on the site of the brick and tile factories were destroyed; the structures with their legible plan schemes and their components are the evidences to understand the production process, which is a significant document for industrial heritage.

- The factory district has vacant structures and open areas that are possible to use. The site is in central location and close to the commercial areas, Anadolu University which can obtain student and public attention.

4.3.2. Building Scale

The potentials on the brick and tile factories are determined separately.

4.3.2.1. Kılıçoğlu Brick and Tile Factory

- Beginning from the 1949, in despite of the interventions and addition of new structures and spaces; the structural elements, mechanical equipments (production line, machinery of mould preparation, extruding machine, conveyor, keller drying) and landscape with their historical value are remained. In the site, all kind of the production and service units and their combination with open areas according to the plan can be seen that caused to preserve the site with all of the components. The landscape elements are designed according to the plan are also worth to be conserved.
- Owing to the East Elevation of the Factory 1 has an authentic architectural character worth to be seen.
- The structure and area evokes a culture of a society and period by existence made the complex worth seeing.
-The location of the factory is in a central position near to the Anadolu University, that has been started to be used with commercial uses.
- The sources for the history of the factory and its pedigree is significant and can be represented with its production process.
- The complex has structures (Factory 1, Factory 2, Factory 3) and open areas with wide spaces possible to use for new functions. With consideration on their values and significance can be planned for new uses.

4.3.2.2. Çift Kurt Brick and Tile Factory

- The concrete structural elements (columns, beams), the vault system in the building which is not a common technique for the brick and tile factories in Eskişehir have still been remained.
- The double hoffman kiln which has a legible plan scheme, smokestack and water tower are worth to conserve.
- The structure with other brick and tile factories provide the area its industrial identity.
-The sources for the history of the factory and its pedigree is significant and can be represented with its production process.

- The building has spaces that are possible to use such as first floor and open area.
- The site is in and central location and close to the commercial areas, Anadolu University, which obtains easy access and has reuse potential. The structure and open area with considering their values and significance can be planned for new uses.

4.3.2.3. Doğan Brick and Tile Factory

- The kiln buildings have still been remained despite of the roof of the structures and destroyed and exposed to the physical deteriorations. So the chamber kilns with their legible plan schemes and the smokestacks are significant in the area that indicates the symbolic value of the brick and tile industry. Therefore, these are worth to be conserved.
-The sources for the history of the factory and its pedigree is significant to understand the production process and social character. These can be represented with its production process.
- The structures such as kiln buildings, mechanical unit and open area have spaces that are possible to use for new functions. Particulary the open areas have extensive areas for the transformation of the sites. The factory is surrounded by commercial buildings that has been built after 2010. The structure and open area with considering their values and significance can be planned for new uses.

4.3.2.4. Kartal Brick and Tile Factory

- The kiln buildings have still been remained despite of the demolished parts.
- The chamber plan schemes are still legible. The chamber kilns and smokestacks are worth to conserve.
- The sources for the history of the factory and its pedigree is significant and can be represented with its production process.
- The building has spaces that are possible to use such as kiln buildings and open area.
- The structure and open area with considering their values and significance can be planned for new uses.

4.3.2.5. Kurt Brick and Tile Factory (Today Espark Shopping Mall)

- The site was designed in 2006; the smokestacks and mechanical units were reconstructed, a new building as shopping mall was constructed and open areas also planned. So the potentials could not be discussed due to the transformation.

The swot analysis is determined by the tables on the next page in urban and building scale through strengths, weaknesses, opportunities and threats.

Table 34: The Swot Analysis for the Urban Area

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
PHYSICAL	- The factories were built in Early Republic Period not just to be a production complex, but for the development of the country's economy, modernize society. - The factories provide different building types (kilns, drying units, mechanical units…) and constructed with structural systems, materials or techniques that is specific to brick and tile industry. The structures are constructed mainly by combination of concrete and brick. The reinforced concrete system, was the most advanced technology of the day, was not widely used in that period. - The factory district with its brick and tile factories is a symbol for development of industrialization particularly with its smokestacks which have partially lost today due to the end of production. - The area can be a rare example in regional or national scale for brick and tile factories remaining together. The industrial area is the integration of various production and service units, but particularly the brick and tile factories; hereby they can be assessed for having group value. In brick and tile factories, as a result of production process the structures and open areas were combined together to indicate the spatial order and hierarchy. - The structures and open areas which are integrated together indicate the production process and the legible plan schemes of the kiln buildings are significant sources..	- In the area, due to the transformation (Espark Avm, 222 Recreational Centre..) and not conserving the industrial buildings, the buildings and complexes started to loss their original qualities in terms of design, construction technique, material, mechanical equipments. - The structures such as Bulgarian Kilns had already destroyed because of the improvement of the production technology. Therefore the identity of the area couldn't be realized.	- The industrial structures, mechanical equipments and open areas are a part of production process and indication of a society should be conserved. These components which cover a large area in the site are significant to understand the progress of the city and urban identity. - The structures and open areas with large spaces in the complexes have possibility to re-use. The area being in the centre have easy transportation possibilities. -The area is in the centre of the city near to the university which can obtain student and public attention.	- The industrial structures, mechanical equipments and open areas are confronted to the destruction due to the planning activities and physical deteriorations.
SOCIO-CULTURAL	- The factories, service buildings and open areas were parts of an industrial city from that period which indicates the culture, social and economic existence of a society	- The structures in the area that could indicate the culture of a society has been demolished. - Today, the public awareness on the conservation of the cultural heritage is not efficient.		
ECONOMIC	- Due to the physical possibility, location, accessibility of the buildings and large open areas of the factories…; the land values of the area was increased.	- The industrial buildings have started to be transformed into new uses with the plan of the municipality that provides economical interests and not considering conservation of the industrial heritage. the building owners are opposed to the municipality and private enterprises appeared for the use of the area. These reasons caused conflict of the interest.	- The factory district has vacant structures and open areas that are possible to use.The site is in central location and close to the commercial areas which obtains easy access.	- The interventions on the transformation of the structures can damage the character of the structures.
ADMINISTRATIVE	- The reuse of the area was started after the 2003 development plan. The planning activities were accelerated after 2011.	- The 2011 Master and Development Plans have many problems as determined in the Planning and Conservation Activities in Chapter 3.		- The planning activities cause without considering the cultural heritage began to effect the industrial area negatively.

Table 35: The Swot Analysis for the Kılıçoğlu Brick and Tile Factory

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
PHYSICAL	- The site of the factory is an entirely designed area with respect to the plan, form and location of the factories, service units (mansion, storage building, carpenter shop...) and open areas. The first kiln and smokestack were constructed in the factory. - The buildings have different architectural characters due to the construction dates, technique, architect. The factory 1 could be decided as a structure represented the period characteristics; however the east elevation possesses Neo-classical elements which was common in the Middle Europe. At the same time, the Bauhaus style can be seen. -The tile and brick production in Eskişehir and Turkey is referred with "Kılıçoğlu" brand. - The factory is located in the industrial area where is the combination of various production and service units, but particularly the brick and tile factories. So as to represent the production process the structures were combined together in the complex to indicate the spatial order and hierarchy of the buildings and open spaces.	- After 1980, new structures (storage, garage, carpenter shop) are added to the area which may prevent the perception of the complex. - One of the stacks was demolished to the lower levels. - Some of the mechanical elements in the factory 1 were removed.	- Beginning from the 1949, in despite of the interventions and addition of new structures and spaces; the complex maintains its historic value. - The structural elements and mechanical equipments are remained. - Due to the type of the structure according to the production process, architect, construction date; the buildings, structures, mechanical elements, landscape is worth to be preserved. - The location of the factory is in a central position near to the Anadolu University, that has been started to be used with commercial uses.	- The factories and complexes became abondened due to the decision of the municipality. With the development plans, the industrial area has started to lose its identity if any precautions aren't taken.
SOCIO-CULTURAL	The complex was a part of an industrial city from the establishment of the Republic Period and indicates the culture of a society. Working conditions and social buildings offered a different life style.	- The public awareness on the values of the factory which indicates the culture of a society with the transformation of the area is not efficient.	- The sources for the history of the factory and its pedigree is significant and can be represented with its production process.	
ECONOMIC	- The site obtains high land prices owing to be in the industrial area where has started to be commercially reused. The factory 2 and 3 are used for storage.	- The site is enclosed by the industrial buildings which have started to be transformed into new uses that provides economical interests So the site is under the pressure of the high land values and private investors.	- The buildings and open areas in the complex can be used for new functions.	-The area covers extensive area and due to the high land values have possibility to transform into commercial uses without deciding the industrial heritage character.
ADMINISTRATIVE	-With 2011 development plan the reuse decision of the area is decided.	- With the 2011 development plan the area was decided to divide into parcels for commercial and park areas. - Unconscious approach of the municipality and the cultural and natural heritage preservation board can damage the character of the building. - The cooperation between building owners and local authorities were not obtained. -The public awareness on the conservation of the buildings in the planning process is not efficient.	- The structure and open area with considering their values and significance can be planned for new uses.	- In the development plan, the function of the site and floor area ratio is determined by not considering the cultural heritage values and the factory is under the threat of theses decisions.

Table 36: The Swot Analysis for the Çift Kurt Brick and Tile Factory

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
PHYSICAL	- The kiln building, smokestacks and water tower are examples of the first production structures on the Early Republic Period. -The kiln building, which is a represantative example for its construction technique and material is a long span structure with a vault system since 1950. -The building is uncommon with having a double hoffman kiln plan scheme which is a significant source in understanding the production process. -The structure with other brick and industrial factories has provided Eskişehir a industrial city character the combination of various production and service units, but particularly the brick and tile factories. Owing to the form and plan scheme, the factory is a rare example in the area. -The structure contains data about the production process, construction technique, material. - The area is registered in 20.11.1995	- Many structures (bulgarian kilns, mechanical units, drying units, smokestacks) were destroyed that decrease authentic character. - Some parts of the kiln building are closed by the brick walls. - The mechanical equipments of the kiln building were transported. Therefore the production process coulnd't be realized. - The building has maintenance problems. - The factory lost its identity due to the demolishment of structures (Bulgarian kilns, drying units, mechanical units) and removal of mechanical equipment which indicates the production process. - The factory became abondened in 1997 due to the decision of the municipality, therefore the industrial area has lost its identity. - The lack of security cause to the destruction of the homeless people.	- The concrete structural elements (coloumns, beams), the vault system in the building have still been remained. - The double hoffman plan scheme is still legible. - The double hoffman kiln, smokestack and water tower are significant sources in understanding the production process; due to the type of the structure according to the production process, construction date; the factory is worth to be preserved.	- The structures can be demolished in the planning process as other examples such as Kurt Factory, Mühendisler Flour Factory or transformed unconsciously.
SOCIO-CULTURAL	-The building was a part of an industrial city from the establishment of the Republic Period and indicates the culture of a society especially by the historic photographes and pedigree.	- The structures in the area that could indicate the culture of a society has been demolished. - Today, the public awareness on the conservation of the cultural heritage is not efficient.	- The sources for the history of the factory and its pedigree is significant and can be represented with its production process.	
ECONOMIC	-The open area of the building has been used for the Terracotta Symposium five times between 2001- 2011 and used for circus area in 2011. -Due to the physical possibility, the building and site is still used for some activities. -The site obtains high land prices owing to be in the industrial area where has started to be commercially reused.	- The building is derelict and not have a permanent use. - The site is enclosed by the industrial buildings which have started to be transformed into new uses that provides economical interests (222 recreation centre, Hayal Kahvesi, Budha..) So the site is under the pressure of the high land values and private investors.	- The building has spaces that are possible to use such as first floor and open area. - The site is in central location and close to the commercial areas which obtains easy access and has reuse potential. The student potential can be used due to the nearness of the Anadolu University.	-The area is in a central position and due to the high land values have possibility to transform into commercial uses without deciding the industrial heritage character.
ADMINISTRATIVE	-With 2011 development plan the reuse decision of the area is decided.	- The area was divided in 7 after 2003 development plan. - With the 2011 development plan the area was decided to divide into two parcels for tourism facilities. - Unconscious approach of the municipality and the cultural and natural heritage preservation board can damage the character of the building. - The cooperation between building owners and local authorities were not obtained. -The public awareness on the conservation of the buildings in the planning process is not efficient.	- The structure and open area with considering their values and significance can be planned for new uses.	- In the development plan, the function of the site and floor area ratio is determined by not considering the cultural heritage values and the factory is under the threat of theses decisions.

Table 37: The Swot Analysis for the Doğan Brick and Tile Factory

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
PHYSICAL	- The kiln building, smokestacks and mechanical units are examples of the first production structures on the Early Republic Period. - The kiln buildings are long span structures with combination of concrete and masonry system (ground floor stone masonry and first floor reinforced concrete with brick infill) which is an unusual construction technique for the structures in 1950's. -The kiln buildings are an example with having chamber kiln plan scheme which is a significant source in understanding the production process. -The structure contains data about the production process, construction technique, material. -The structure with other brick and industrial factories has provided Eskişehir a industrial city character the combination of various production and service units, but particularly the brick and tile factories. - The area is registered in 14.08.2003.	- Some part of the roof and the chamber kiln1 are demolished. - The roof and some part of the chamber kiln 2 are demolished that caused physical deterioration. -The plan scheme of the drying unit isn't legible. - Many structures (bulgarian kilns, drying units,smokestacks) were demolished. - The mechanical equipments of the kiln building were transported. Therefore the production process couldn't be realized. - The factory lost its identity due to the demolishment of the structures and removal of mechanical equipment which indicates the production process. - The factories and complexes became abondened due to the decision of the municipality, therefore the industrial area has lost its identity. - The site provides hard pedestrian access to the buildings and vehicle access by a side road.	- The kiln buildings have still been remained despite of the demolished parts. - The chamber plan schemes are still legible. The chamber kilns and smokestacks are worth to conserve. - The location of the factory is in a central position near to the Anadolu University, that has been started to be used with commercial uses.	- The physical deterioriations due to the lack of roof covers damages the structural elements and materials of the kiln buildings. - The structures can be demolished in the planning process as other examples such as Kurt Factory, Mühendisler Flour Factory or transformed unconsciously.
SOCIO-CULTURAL	- The building was a part of an industrial city from the establishment of the Republic Period and indicates the culture of a society.	- The structures in the area that could indicate the culture of a society were partially destroyed. - Today, the public awareness on the conservation of the cultural heritage is not efficient. - The recognition of the factory is lower than other factories due to its location.	- The sources for the history of the factory and its pedigree is significant and can be represented with its production process.	
ECONOMIC	- The site obtains high land prices owing to be in the industrial area where has started to be commercially reused.	- The building is derelict and not have a permanent use. - The site is enclosed by the industrial buildings which have started to be transformed into new uses that provides economical interests (222 recreation centre, Hayal Kahvesi, Budha..) So the site is under the pressure of the high land values and private investors.	- The factory is surrounded by commercial buildings that has been built after 2010. - The building has spaces that are possible to use such as kiln buildings, mechanical unit and open area. - The buildings in the complex can be used for new functions.	-The area is in a central position and due to the high land values have possibility to transform into commercial uses without deciding the industrial heritage character.
ADMINISTRATIVE	- With 2011 development plan the reuse decision of the area is decided. - The container of a taxi stand used the North part of area without permission. In 27.07.2011, the removal decision against the unauthorized use of the site by the container of a taxi stand was taken which indicates the attention of the municipality.	- With the 2011 development plan the area was decided to divide into two parcels for park and commercial facilities. - Unconscious approach of the municipality and the cultural and natural heritage preservation board can damage the character of the building. - The cooperation between building owners and local authorities were not obtained. -The public awareness on the conservation of the buildings in the planning process is not efficient.	- The structure and open area with considering their values and significance can be planned for new uses.	- In the development plan, the function of the site and floor area ratio is determined by not considering the cultural heritage values and the factory is under the threat of theses decisions.

Table 38: The Swot Analysis for the Kartal Brick and Tile Factory

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
PHYSICAL	- The kiln building, smokestacks and mechanical units are examples of the first production structures on the Early Republic Period. - The kiln building 1 is a long span structures with combination of concrete and masonry system (ground floor stone masonry and first floor reinforced concrete with brick infill) which is an unusual construction technique for the structures in 1950's. -The kiln buildings are an example with having chamber kiln plan scheme which is a significant source in understanding the production process. -The structure contains data about the production process, construction technique, material. -The structure with other brick and industrial factories has provided Eskişehir a industrial city character the combination of various production and service units, but particularly the brick and tile factories. - The area is registered in 14.08.2003. The complex almost conserves its original boundary today.	- Due to be exposed to physical deteriorations the structures are in danger. - Many structures (Bulgarian kilns, drying units) were demolished and existing structures are partially destroyed. - The mechanical equipments of the kiln building were transported. Therefore the production process coulnd't be realized. It is close to commercial areas, however the access to the area is provided by a ruined road.	- The kiln buildings have still been remained despite of the demolished parts. - The chamber plan schemes are still legible. The chamber kilns and smokestacks are worth to conserve. - The location of the factory is in a central position near to the Anadolu University, that has been started to be used with commercial uses.	- The physical deterioriations due to the lack of roof covers damages the structural elements and materials of the kiln buildings. - The structures can be demolished in the planning process as other examples such as Kurt Factory, Mühendisler Flour Factory or transformed unconsciously.
SOCIO-CULTURAL	- The building was a part of an industrial city from the establishment of the Republic Period and indicates the culture of a society.	- The structures in the area that could indicate the culture of a society were partially destroyed. - Today, the public awareness on the conservation of the cultural heritage is not efficient.	- The sources for the history of the factory and its pedigree is significant and can be represented with its production process.	
ECONOMIC	- The site obtains high land prices owing to be in the industrial area where has started to be commercially reused.	- The site is enclosed by the industrial buildings which have started to be transformed into new uses that provides economical interests (222 recreation centre, Hayal Kahvesi, Budha..) So the site is under the pressure of the high land values and private investors.	- The building has spaces that are possible to use such as kiln buildings and open area. - The buildings in the complex can be used for new functions.	-The area has high land values have that cause the possibility to transform into commercial uses without deciding the industrial heritage character.
ADMINISTRATIVE	-With 2011 development plan the reuse decision of the area is decided.	- With the 2011 development plan the area was decided to divide into three parcels for health, commercial and recreative commercial facilities. - Unconscious approach of the municipality and the cultural and natural heritage preservation board can damage the character of the building. - The cooperation between building owners and local authorities were not obtained. -The public awareness on the conservation of the buildings in the planning process is not efficient.	- The structure and open area with considering their values and significance can be planned for new uses.	- In the development plan, the function of the site and floor area ratio is determined by not considering the cultural heritage values and the factory is under the threat of theses decisions.

Table 39: The Swot Analysis for the Kurt Brick and Tile Factory (Espark Shopping Mall)

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
PHYSICAL	- The building had been an example of the first production factories on the Early Republic Period until the construction of the Espark Shopping Mall in 2006. - The structures in the factory weren't conserved; however reconstructed in their same place as a symbol of brick and tile production. - The site boundary was retained since 1950. - The area was a tranformation example of an industrial area. - Today only by the reconstructed smokestacks and additional units, the industrial complex character can be realized.	- However many structures (Bulgarian Kilns, kilns, drying units, mechanical units) were demolished and buildings, smokestacks were reconstructed. So the historic character of site couldn't be percept. - The factory lost its identity due to the demolishment of the structures and removal of mechanical equipment which indicates the production process. - Many structures (Bulgarian Kilns, drying units, mechanical units) were demolished. - A smoke stack was removed. - The mechanical equipments are removed. - The reconstructed buildings are registered. - The interventions and reuse hadn't been done according to the fundamental principles of conservation so the production process couldn't be understood. - The industrial buildings were demolished for commercial uses.	- The site was designed in 2006; the structures were reconstructed or constructed; and open areas also planned. So the potentials couldn't be discussed due to the transformation.	- The transformation caused an unplanned increase in traffic, that indicates disregarding the transportation conditions of the area. With other transformations the situation can become serious and some precautions should be taken.
SOCIO-CULTURAL	- Due to the transformation, the area has a sociocultural character that represents the transition from an industrial area to commercial and recreational area derived from globalization.	- The public awareness on the demolishment of the structures which indicates the culture of a society with the transformation of the area is not efficient.		
ECONOMIC	- The site obtains high land prices owing to be in the industrial area where has started to be commercially reused. Therefore the area was transformed. The new building is used as shopping mall and three reconsruction buildings as cafe. The open area is used for public uses.	- The site is enclosed by the the industrial buildings which have started to be transformed into new uses that provides economical interests. The site was under the pressure of the high land values, so the buildings were demolished or reconstructed.		
ADMINISTRATIVE		- Unconscious approach of the municipality and the cultural and natural heritage preservation board. The values hadn't been examined by the municipality cultural and natural heritage preservation board. The reconstructed smokestacks and buildings were 14.08.2003; that indicates the conservation approach - The nearby environment and relation with it wasn't considered.		

In conclusion; the industrial buildings are the examples of the first production factories on the Early Republic Period constructed with industrialization. So they have historical value. Due to the type of the structures according to the production process, construction date; the factories have rarity value. The buildings are located in the industrial area where is the combination of various production and service units, but particularly the brick and tile factories. That provides group value. The buildings were a part of an industrial city from the establishment of the Republic Period and indicates the culture of a society. Thus they have sociocultural value. The buildings and open areas are concrete examples defined by the production process and the kiln buildings indicate plan schemes which are a significant source in understanding. Hereby that obtains document value. With an industrial city character, the structures with other brick and industrial factories have provided Eskişehir identity value. The sites of the factories obtain high land prices owing to be in the industrial area where has started to be commercially reused. Therefore, the site have economic value. The Kılıçoğlu Factory is the most conserved factory with its values. Kılıçoğlu Tile and Brick Factory refer the tile and brick production in Eskişehir with “Kılıçoğlu” brand. The complex preserves the structures with production process, which provides rarity value. So as to represent the production process the structures were combined together in the complex to indicate the spatial order and hierarchy of the buildings and open spaces. Therefore, the factory has group value. With all of these values; the structures, mechanical equipments and open areas are part of industrial heritage and worth to be preserved.

The problems of the factory district were begun with the abondenment of the structures in 1980’s with the end of the production that cause the dereliction of the site. In time; with the lack of planning, the factories exposed to the physical deteriotions, vandalism and destruction; that cause the different conservation status of the brick and tile factories according to their structures, mechanical components, open areas and site boundaries. The Kurt Factory was destroyed, four structures were reconstructed and a new building was designed as Espark Shopping Mall. The reason of this development is the demand for the construction of new structures and these interventions represent the approaches to the industrial heritage in the area by means of conservation and adaption of new buildings.

The structures began to be registered after 1998 by the Cultural and Natural Preservation Board; however, some of the registered industrial buildings were destroyed such as Mühendisler Flour Factory and Kurt Factory. Even other industrial structures not conserved and periodic maintenance are not provided.

In the establishment and dereliction of the factory district; the disputes had not begun. However with the planning developments of the area, the conflict of interest between municipality, landowners and private investors has been continued.

With the 2003 development plan the structuring of the commercial and residential structures were began. So the character of the area began to be transformed from vacant to the commercial. However, the industrial structures were not adapted to these new uses with their heritage values. Kurt Factory, that was transformed from the factory to the shopping mall is a disputable example by means of its conservation interventions. In 2011 Development and Master Plans; instead of solving the problems of the existed plan, the decisions has been continued with increase in the floor area ratio. The development and master plans developed in 2011 aimed not conservation, but to build new structures for commercial uses. The problems of tha plans are such as the allotment of the sites for increasing the floor area ratio into different functions, not considering the values of industrial heritage, lack of public awareness.

The industrial structures and complexes are enclosed by the industrial areas, which have started to be transformed into new uses that provide economical interests with the plan of municipality. However, in the conservation of the industrial structures through planning activities should be obtained and the mechanical equipments, open areas must be preserved by indicating the production process and culture of a society. In this way, the urban identity can be continued through new uses.

CHAPTER 5

CONSERVATION PRINCIPLES FOR THE BRICK AND TILE FACTORIES IN ESKİŞEHİR

The brick and tile factories in Eskişehir were symbols of physical, social and economic process of Turkey in the Early Republic. So; the complexes with their structures, mechanical components and open areas have significance that should be conserved with their values and in the conservation process, the principles should be obtained. Since the introduction of the Venice Charter (1964), there have been many conservation guidelines in the form of the charters, declarations that have been originated. In these documentations, what to preserve and how to preserve it are essential issues to discuss within tangible and intangible values. The aim is to respect for all forms of knowledge and existing evidence with the authenticity and integrity of the place. The public interest within the conservation of the structures and complexes is significant. Besides, the public awareness and the access for the understanding of the conservation sites should be provided.[163]

Due to the problems, the planning activities should be reexamined with its physical, sociocultural, administrative and economical features… The principles for the area that covers the brick and tile factories in Eskişehir factory district based on a new plan would be evaluated in that chapter according to their values, problems and potentials (swot analysis). The principles began with the conservation and management planning process, continued with the principles related to the sociocultural structure. The administrative and economical structure that should be obtained in the planning process is another significant issue to discuss.

5.1. Principles Governing a Conservation and Management Planning Process

The factories were established in Early Republic Period and with the transportation of the production to the organized industrial zone; the areas became derelict. The closure of the factories caused to the change in the context of the area. At the present time; the area became in the centre of the city and in between commercial activities near to the Anadolu University which can have potential to draw student and public attention. These developments make the area to have more high land prices and economical values, that results in conflict of interest between the parties. By reason of dereliction, the structures became lack of maintenance and exposed to the physical deteriorations. The mechanical

[163] The conservation principles were defined in Chapter 2.

elements were removed to the new factories which are located out of the city.

The buildings and complexes in the factory district were integrated each other, that forms a context in the urban pattern. Thus the area was entitled as the factory district. The industrial area is the combination of various production and service units that indicate the production process with the spatial order and culture of a society.

The factories have different conservation status as seen in the figure 3. As Kılıçoğlu Factory conserved its significance different than other factories. The Çift Kurt, Kartal and Doğan are partially conserved with their construction technique and material. The Kurt Factory is not conserved, however some of the structures constructed in their place. Except Kurt Factory; the structures with their legible plan schemes are the evidences to understand the production process which is a significant document for industrial heritage.

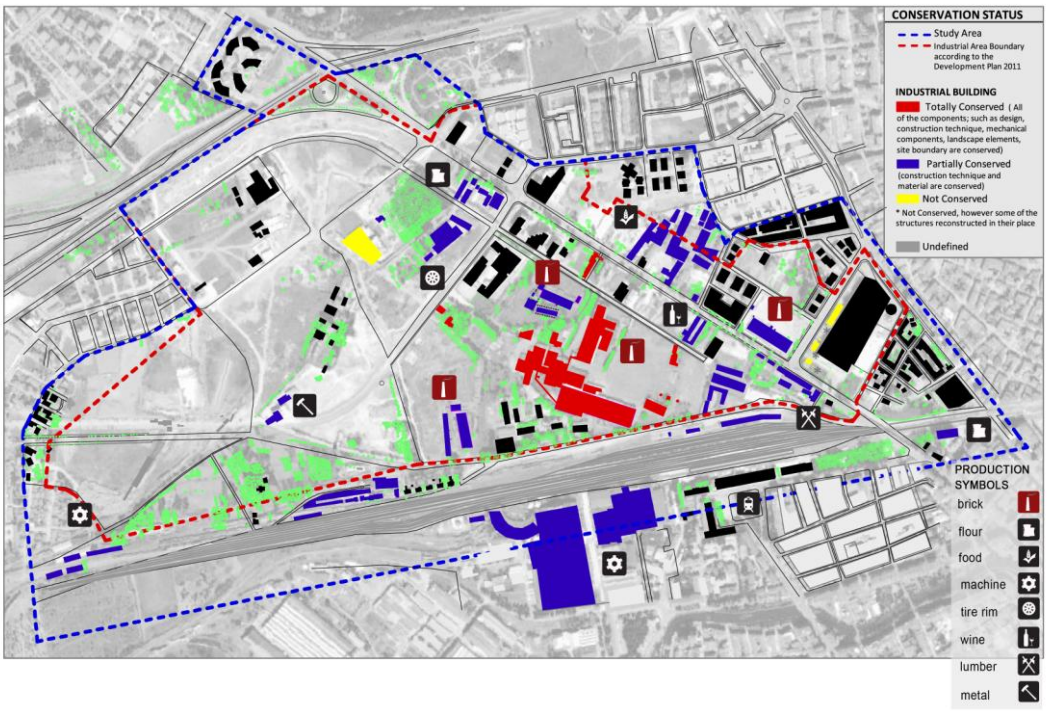


Figure 101: The Condition of the Buildings in the Factory District in 2011 (produced after the 2011 aerial photograph from the Google Earth and the Conservation Management Plan from the Eskişehir Municipality are obtained)

The conservation principles related to the physical structure of the area are analysed in two groups as urban and building scale. In urban scale, the area that covers the brick and tile

factories are evaluated. The diversified characteristics of the five brick and tile factories were represented in the building scale.

5.1.1. Urban Scale

The area is a part of urban tissue and should be integrated in physical, socio-cultural and socio-economical means. The principles according to the values and significance of the site reference to the national[164] and international documents are defined in the below. The principles governing a conservation and management planning process;

a. The new use of the area should be determined by giving the highest priority to the authenticity and integrity of the area.

b. The interventions should respect to the social, cultural, historical and natural contexts and settings.

c. The planning of the industrial area is an essential tool in effective conservation.[165]

a. The new use of the area should be determined by giving the highest priority to the authenticity and integrity of the area.

- The structures, mechanical elements, open areas and intangible values are the authentic elements of the factories that should be preserved with new uses which should obtain social, functional, financial and environmental sustainability. With that aim; the adoption of the new functions should be appropriate to the spatial relation between the brick factories and open areas. The conservation of the industrial heritage; such as structures, sites, areas and landscapes must respect the basic criterias of authenticity in the spirit of the Nara Document (1994) [166] The document is considered due to the approach on dealing all of the elements of the industrial sites. In the national and international documents, the aim is retaining authentic characteristics, tangible and intangible values and presentation in situ. So the minimum intervention should be made not to cause loss of fabric or evidence of cultural heritage value. The interpretation of the conservation sites should be provided through the values and significance of the site.[167]

- The new uses of the brick and tile factories should be open to the public use. According to the law, conversation should be obtained with the interest of the public. For that reason,

[164] The national documents on conservation of cultural heritage was defined in Chapter 2.
- The Turkish Law No.2863 on the Preservation of Cultural and Natural Assets (Kültür ve Tabiat Varlıklarını Koruma Kanunu), No.2863, 1983, *http://www.kultur.gov.tr/teftis*, accessed on April 25, 2012
- The Turkish Law No.5366, "Yıpranan Tarihi ve Kültürel Taşınmaz Varlıkların Yenilenerek Korunması ve Yaşarılarak Kullanılması Hakkında Kanun, *http://www.kultur.gov.tr/teftis*, accessed on April 25, 2012
[165] *ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value,* 2010, ICOMOS, New Zealand
[166] *The Nara Document on Authenticity,* 1994, ICOMOS
The conservation principles in the national and international documents were examined in the second chapter.
[167] *The ICOMOS Charter for The Interpretation and Presentation of Cultural Heritage Sites*, 2010, ICOMOS, Canada

functioning the area as a public space should be the essential principle. The public awarenness can be obtained by the effective programs in the planning. The Kılıçoğlu Factory is the most conserved site with its structures, mechanical and landscape elements, conserving its group value; decided as a focal point by re functioning as an industrial museum. The use of the area in the night and day can be obtained by the accomodation possibilities. Concurrently, the tourists and students an accommodation area should be required.

-The boundaries of the site with its elements (buildings, mechanical elements, landscape elements) should be conserved together and the integrity should not be damaged. The site boundaries of the Çift Kurt, Kartal, Doğan and Kılıçoğlu, that were decided to be divided into parcels in the 2011 development plan, should be conserved in that approach. The condition was proclaimed in the The Turkish Law No 2863, Article 18 "Plots of fixed cultural assets that should be protected cannot be separated or merged in a manner as to affect the contents of the fixed cultural assets." [168]

- Another important issue is that a structure or feature of cultural heritage value should be conserved on its original site. The relocation intervention that was seen in the smokestacks of the Kurt Factory (Espark Shopping Mall) was not appropriate. As declared in ICOMOS New Zealand Charter (2010) "Relocation of a structure or is required in order to clear its site for a different purpose or construction is not a desirable outcome and is not a conservation process"

- The additions should respect to the heritage character. All visible interpretive elements (such as landscape elements, information panels) must be compatible to the character, setting and the cultural and natural significance of the site, while remaining easily identifiable. As declared in the New Zealand Charter "Any alterations or additions should be compatible with the original form and fabric of the place, and should avoid inappropriate or incompatible contrasts of form, scale, mass, colour, and material."[169] All of the elements should be relevant to the area.

In the conservation approaches, the examples in the world were analysed. The different approaches on usage decisions were decided. In Eskişehir Factory District, the integrity between sites of the brick factories and the connection of the area with the urban texture should be obtained by a reuse decision. As in the last progresses of the municipality; the thematic parks as Sazova Park or Kent Park were established with eclectic elements in the border of the city; however the factory district which owns authentic cultural heritage and

[168] Kültür ve Tabiat Varlıklarını Koruma Kanunu, No.2863 (The Turkish Law No.2863 on the Preservation of Cultural and Natural Assets), 1983, *http://www.kultur.gov.tr/teftis*, accessed on April 25, 2012
[169] *ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value,* 2010, ICOMOS, New Zealand

located in the city centre is more adequate to be transformed within its context. The area contains industrial or ruined structures, that have possibility to be functioned as a Brick and Tile Industrial or Archaeological Park, creates an open air cultural museum. In the open air industrial museum park, the thematic parks can be created according to their location and production type; as Brick and Tile Park Museum, Metal Park Museum, Railway Park Museum, Nutriment Park Museum 1 and 2. In every area, a complex should be organized as a museum to indicate the significance and values of the production type. The improvement of the industrial route on the site, the represantation of the industrial production types and its history could be obtained.

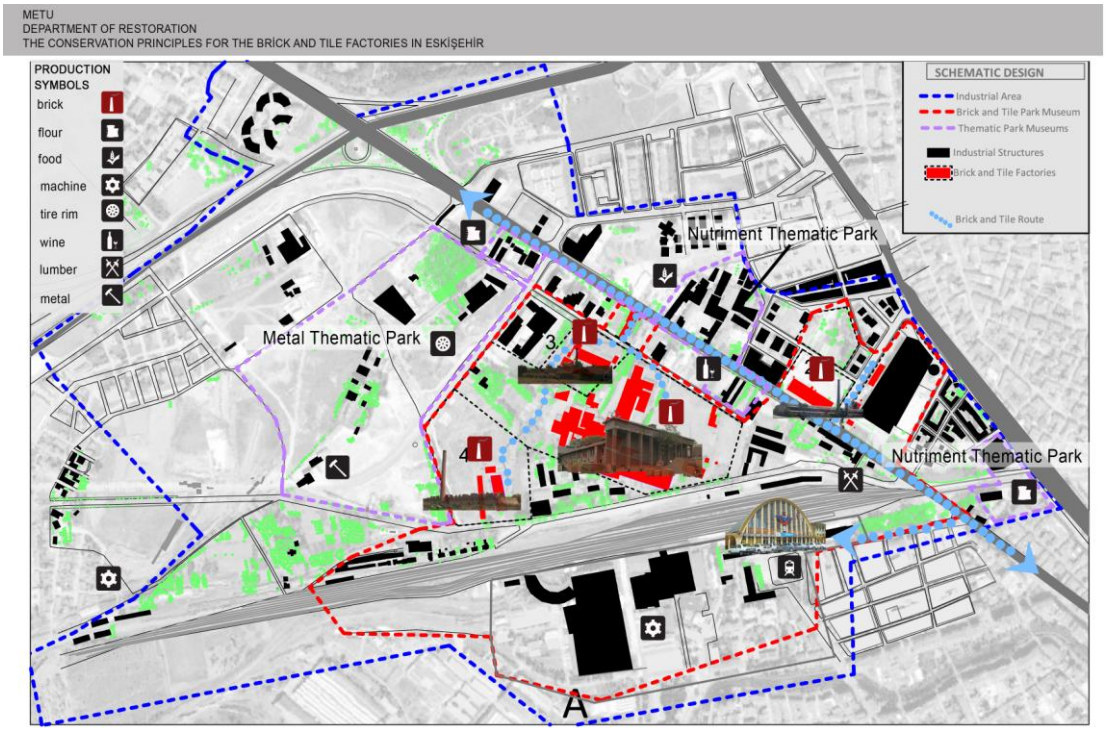


Figure 102: The Proposal for the Industrial Area

For use of the complexes; the residents and students that covers significant amount of the area should be considered. On behalf of young population; not only shopping and eating but the cultural, educational and recreational functions are focalized. " A city that can attract new residents is sure to appeal to visitors as well."[170] So the cultural and recreational programs

[170] Rıfkınd, Carol, "*Cultural Tourism: New Opportunity for the Industrial City",* Senior Associate for Cultural Tourism, USA

that enable the culture tourism is offered. The cultural tourism can be managed to produce a broad economic impact when it is based on a comprehensive evaluation of the community and market resources. Tourism generates employment opportunities for the unskilled, students, part-time workers, small business entrepreneurs. So the tourism development can create a positive community image for Eskişehir.

b. The interventions should respect to the social, cultural, historical and natural contexts and settings.

-All aspects of the site's cultural, social, and environmental context with its values and significance should be considered. Intangible elements of the heritage form a social context as significant as the physical. The true character of a city is determined by the people who lived, worked there. So it is necessary to include all groups that have contributed to the historical and cultural significance of the site. Therefore the students and residents; when the tourism developments is considered, the local tourists originated the context.

-The surrounding landscape, natural environment and geographical setting are integral parts of a site's historical and cultural significance. The landscape elements except Kılıçoğlu were not totally conserved. The landscape elements such as alleys in the entrance of the Kılıçoğlu site, tree groups on the West side originate the context of the factory.

-The contributions of all periods to the significance of a site should be respected. In time, some additional buildings were added to the sites should be respected. In Kılıçoğlu, carpenter shop, storage buildings. or in Çift Kurt the security unit were constructed after 1975 which identify the production process.

c. The integrated management plan of the industrial area is an essential tool in effective conservation.

- For the area, after 1956 six development plans were improved of which does not consist the conservation of the industrial heritage character of the area. The management plan should be based on conservation principles that directs all conservation work and identifies the cultural heritage value significance of the place. All aspects of conservation work should be planned, directed and undertaken by people with appropriate conservation training and experience directly relevant to the conservation process. One of the significant problem of the Eskişehir development plan is not adopting multi disciplinary approach. In the progress; the multidisciplinary expertise of scholars, community members, conservation experts, governmental authorities, site managers, tourism operators, architects, landscape architect, industrial designer, urban planner, art historian, sociologist, engineer, economist, advertiser, student, residents, owners of the buildings… should be participated.

-In order to safeguard cultural heritage value, planning for risk mitigation to assess the potential risks is essential. The Kartal and Doğan Tile Factories are the first factories at risk; by reason of the destruction of of the roof, the structures are exposed to the physical deterioration. The Çift Kurt Factory is the second, which was affected by the physical causes and human factors. The Kılıçoğlu is the most conserved example. The Kurt Factory was transformed in 2007 and still in use that cause least degree of risk.

-The conservation projects for factories in different scales should be designed. In the planning process, the specifications for conservation work which is a guiding document should be determined. In the area, the least degree of intervention should be adopted. In these processes the skilled person and cyclical maintenance is essential. The industrial buildings are generally constructed by brick and concrete; therefore a guide for building material can be prepared to be a model so as to use in brick and tile factories.

-The architectural competitions on the projects of the factories can be organized. The Finnish Architectural Policy defined as "The competitions can encourage innovation of architecture to seek out exemplary solutions."

In conclusion, any intervention which would reduce cultural heritage value is undesirable and should not occur. All of these solutions must be effective, compatible and reversible. The decisions on principles governing a conservation and management planning process are determined. However the detailed decisions and design process should be acquired by the detailed restoration projects and architectural design plans of the factories.

5.1.2. Building Scale

In this scale; the elements that should be conserved, the use proposals with basic interventions to the buildings and complexes and presentation of the sociocultural features are evaluated.

a. Kılıçoğlu Factory

The Kılıçoğlu is the most conserved factory to represent the production process through the integration of the structures with open areas and mechanical equipments and the designed sociocultural spaces for the workers. At the same time, the factory obtains history of production and progress of the spaces by the additions that were built in time with the transformation in the technology. The authenticity of the factory based on 1947, 1970, 1980… As in the examples on the conservation approaches; the structures that were conserved totally with their mechanical components are appropriate for the museum use. So

The Kılıçoğlu Brick and Tile Factory with its structures (the three of the factory buildings, smokestacks, storage, vehicle maintenance atelier, carpenter shop, mansion), mechanical equipments and areas has the characteristics of museum; so the function of the area can be considered as an industrial museum.

The factory would be functioned as an industrial museum of the brick and tile park with additional functions. Due to the location and values of the area, the site is on a focal point. The mechanical elements should be presented with experimental methods, museum type display and presentation on site. The production process should be presented in some structures. The factory consists of three types of kilns (tunnel, hoffman) and service buildings such as carpenter shop, storage, dining hall, mansion that can be used for interpretation of the area. This process not only conserved the industrial production technique, but provides information and functional sustainability. For that purpose; the lectures, seminars, training, workshops can be planned. The service functions to the industrial museum should be considered. So with recreational uses, the area can be used at night. The respect to the historical setting is obtained. In the conservation project the values of the complex should be evaluated by an expertise team.

b. Çift Kurt Factory

The complex, was constructed by the German Architects, contains a double hoffman kiln which is unique in the site. Besides the kiln; smokestacks, water tower, air ventilation stacks are worth to be preserved. Owing to its location and possible use area, the new use of the area should be given after a multidisciplinary study and a project that are based on conservation should be decided.

The intangible values of the factory such as origins should be obtained by the investigation to present in situ to indicate the origins of the factory. The Çift Kurt name should be continued for the memory of the society.

c. Doğan Factory

The structures in Doğan Factory such as kiln buildings, mechanical units, smokestacks are worth to be preserved. In the scope of the planning of the factory district, the design projects that obtain conservation of the industrial heritage should be formed. The history and pedigrees of the factory should be evaluated in this progress to perform an effective plan. With the aim of understanding the sociocultural structure, the origins of the factory can be analysed and presented in situ.

d. Kartal Factory

The kiln buildings and smokestacks should be preserved. The design projects in the scope of the development plans should be developed with conservation of its values and significance. In this process; the origins of the factory with its history and pedigree should be determined to interprete the factory and obtain an effective plan.

e. Kurt Factory (Today Espark Shopping Mall)

Espark Shopping Mall which was constructed in the place of Kurt Factory have new buildings that is not obliged to be preserved. However the structure has economical value. Another aspect can be the reconstructed structures have positive effect for the pedestrian and vehicle flow by indicating the perception of the integration with each other through the main road.

2. Principles related to the Sociocultural Structure

With the establishment of the railway, the population of workers increased in the Early Republican Period and the city obtained an industrial character. After the constitution of the universities; the population of the students increased, the transformation into a student city were started. The projects of the municipality accelerated the local tourism as mentioned in the brief historical background. So that the area contains historical value with diversity of cultures. Due to the physical possibility (be close to the university obtain easy access of students) , location, accessibility of the factory district, the area has use value and obtain high land prices.

The industrial heritage in the factory district haven't been cognized by the residents and students adequately. The owners of the sites, municipalities, cultural and natural heritage preservation board and other authorities who have knowledge ignore the values of the site or do not regard the researches. Thus, the significance and values of the area consciously or unconsciously have not been considered by the people connected with the area. To enhance tourism; some projects such as "Odunpazarı Evleri Yasatma Projesi", regeneration of some industrial structures such as 222, Hayal Kahvesi, Haller were implemented which are disputable. In the ongoing planning processes, the public participation has not been provided, which has negative effects on the implementations.

As principles related to the socio culture; two significant issues are particularly underlined in international and national documents. First one is the requirement of the interpretation and

presentation by the public. The understanding should be based on all aspects of its cultural heritage value, both tangible and intangible that consists of the historical, social, spiritual, symbolic and traditional values. The comprehension of the intangible value should be obtained by the public awareness. Factually, the importance of the cooperation between the public and authorities are emphasized. The latter is that, the conservation act should be done for the interest of the public that is declared in the Turkish Law No.2863. [171]

The principles related to the Sociocultural Structure are;

a. The interpretation of the values and significance of the industrial heritage in the factory district is essential.

b. The significance of the public interest should be understood.

a. The interpretation of the values and significance of the industrial heritage in the factory district is essential.

With the aim of the appreciation of the area by the public, the programme and education system for the interpretation and presentation on heritage conservation and assist them to obtain effective connection should be applied. The programmes about the heritage significance for various users (recreationists, residents, tourists, visitors…) especially the students should be made and physically accessible to the connected people and other interested parties by an archive. This system contains industrial museum, publication, archive, digital platform (Website and CD), itinerary, news releases, community letter, media, seminars, conferences, workshops… The Kılıçoğlu Factory is proposed as an industrial museum for the museum type displays and presentation on site. During the formation of the system, the consultation with the connected people, systematic documentary, oral research, physical investigation and recording of the place and other relevant methods are necessary to understand the heritage.

Another issue is the documentation of the area with its cultural heritage values, significances and all aspects of its conservation to ensure that this information is available to present and future generations.[172] Documentation should be based on a well researched, multidisciplinary study of the site by the architect, historian, urban planner, sociologist, finance expert, art historian… and surrounding. Recording should be open for public comment and involvement. Continuing research training and evaluation are important to furthering the understanding and appreciation. The interpretive (training and research) programme should be designed to train technical personnel and manage the information

[171] The Turkish Law No.2863 Article 14 were given in the second chapter.
[172] *ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value,* 2010, ICOMOS, New Zealand

system of the area.

b. The significance of the public interest should be understood.

The conservation should be progressed with the aim of the public welfare. That can be realized by the re functioning of the area with public uses that is defined in the principles governing a conservation and management planning process. In that case, the private ownership is a problem due to the discussions between municipality and owners. Owing to the movable and immovable cultural and natural assets are qualified as state property defined in The Turkish Law No.2863.[173]

3. The Principles Related to the Administrative and Economic Structure

The organization structure of the management plan should be formed by some laws in Turkey.[174] In this part, the present situation on the administrative and economic structure is studied. The main unit that is responsible for the conservation of the cultural assets is the Ministry of Culture and Tourism. The Natural and Cultural Heritage Conservation Board established policies, principles; create the financial sources and solve the administrative problems in upper scale. The unit should be away from politics and relation with universities, international boards. The Tepebaşı and Büyükşehir Municipalities design restoration projects and the KUDEB and Project offices plan the application projects. A scientific consultation council should be established to have an effective approach.

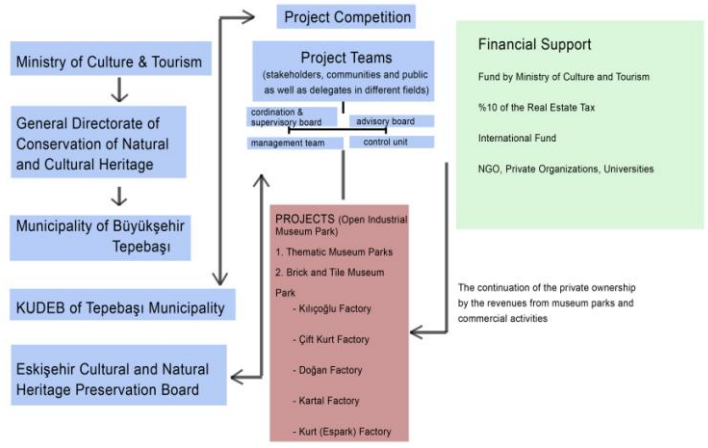


Figure 103: The Legal, Administrative and Financial Model for the Conservation Projects

[173] The Turkish Law No.2863, Article 14 was examined in the second chapter.

[174] These laws are firstly Kültür ve Tabiat Varlıklarını Koruma Kanunu, No.2863 (The Turkish Law No.2863 on the Preservation of Cultural and Natural Assets) and " Alan Yönetimi ile Anıt Eser Kurulunun Kuruluş ve Görevleri ile Yönetim Alanlarının Belirlenmesine İlişkin Usul ve Esaslar Hakkında Yönetmelik"

According to the Turkish law, the organization structure of the area consists of cordination and supervisory board, management team, advisory committee and control unit. The cordination and supervisory board is responsible for the approval and control of the application of the management plan. The main duty on the preparation and application of the management plan is given to the management team. The advisory board analyses the draft plan and makes suggestions on the decision and application process. In the committee, the participation of the stakeholders, the experts from universities, represantatives of the Chamber of Architects, UNESCO, ICOMOS should be provided. The control unit supervises the application of the management plans.

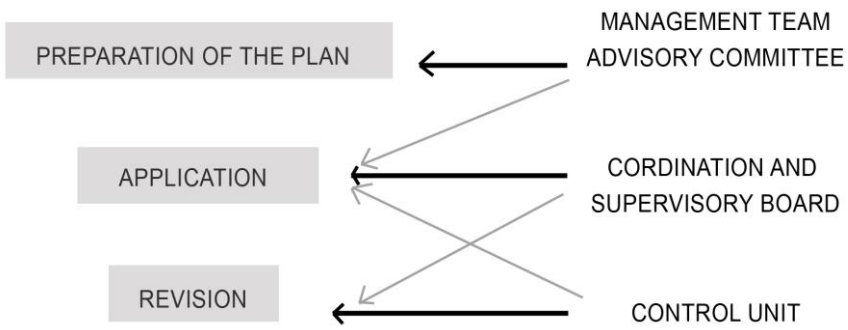


Figure 104: The Relation Between Units in the Management Plan

In other European Countries, the decisions are dependent on autonomous establishments such as English Heritage, IBA; thus the decisions are distant from politics. In Turkey, the system is dependent to the municipalities and central administration that can cause objections as seen in the factory district.

The land prices are high that cause the increase in usage of the areas. The conflict of the interest in the area was formed due to these reasons determined in the fourth chapter. In the examples that were analysed in the second chapter, the models for the ownership status of the areas were defined. The private ownership that is similar to Eskişehir factory district was seen in the Emscher Park Case. The administration of the area was done by the stateowned private enterprise and the projects were financed by the local authorities and private enterprises. The reveneus that are obtained from the facilities of the new uses were gathered in a pool to share between stakeholders. In other examples (England Dockland and

Beijing Art Zone) models for different ownership status were applied. From the examples it can be seen that the financial resource is necessary for the continious and successful work; so it is essential to establish an economic model. For the problem of the private ownership status of the Eskişehir Brick and Tile Factories should be solved through a feasible model with the benefit of the stakeholders, local authorities and public that obtains an extensive and multidisciplinary study.

The organisms in decision process should be minimised to decrease inconsonance and rivalry. The project teams for projects should formed and on each project teams; stakeholders, communities and public as well as delegates in different fields should be obtained. So the participation of the people connected to the area should be provided.

The conservation should be supported by the financial sources and a financial model. As the sustainability of the ownership status is in every area, with the assistance of municipality and museum park revenues that are obtained from the museum tours and commercial activities; can be pooled to obtain co-operative arrangements. The first source is the fund for contributing in the repair of fixed cultural assets as defined in the Law No.2863 "Ministry of Culture and Tourism real, cash and technical assistance and loans for the protection, maintenance and repair of cultural and natural assets that should be protected, owned by real and corporate persons subject to special legislation."[175] The second source is the contribution margin that is obtained in the %10 proportion of the real estate tax according to the real estate tax law no. 1319. The margin should be used for the conservation of the cultural heritage assets.[176] The alternates is the encouragement of the cultural investments. The cultural investments that conserve the cultural heritage and assist the cultural sustainability are encouraged by the incentives determined by the law. The support can be provided from the international funds, the private organizations, non-governmental organizations (Chamber of Industry, NGO), Universities (Anadolu University). The public and private sectors participation is essential for the success of cultural tourism effort.

In conclusion; the industrialization influenced Turkey in Early Republic Period and some of the cities were chosen through the policies of the country. Eskişehir is among these cities specialized in brick and tile production. After that period, the developments on industrialization continued till the transportation of the functions to the organized industrial city due to the decisions of the municipality. The universities that established in 1980's began to change the identity to the student city with residential and commercial activities. Concurrently, the municipality realized some projects as conceptual parks, rehabilitation

[175] Kültür ve Tabiat Varlıklarını Koruma Kanunu, No.2863 (The Turkish Law No.2863 on the Preservation of Cultural and Natural Assets), 1983, *http://www.kultur.gov.tr/teftis*, accessed on April 25, 2012
[176] Madran, Emre, "*Kültür ve Tabiat Varlıklarını Koruma Mevzuatındaki Son Düzenlemeler",* METU, Ankara

areas as Odunpazarı to obtain potential areas for local tourism. In between these developments; the factory district has become a significant location that is easily accessible to the Anadolu University and commercial streets, that resulted in the change of the identity.

The late registration date causes the demolishment of the structures and removal of the mechanical elements. Although registration of the structures were accepted in 2003, the industrial heritage has not been realized that resulted in destruction and physical deteriorations. Besides, the developments on building commercial and residential units around the area resulted in the increase in land values, that caused the demolishment of the registered factory, Mühendisler Flour Factory. Therefore the brick and tile factories with their structures, mechanical elements, open areas and boundaries were not conserved due to the planning approaches of the authorities that aimed construction instead of conservation and irrelevance of the public to the subject.

The aim of this thesis is to define the brick and tile factories in Eskişehir factory district with the planning activities; to develop an evaluation in order to decide problems, values and potentials and finally to improve conservation principles in urban and building scale. Consequently, the management plan for the area should be improved through the detailed studies and evaluations. In the scope of the study a concept for the brick and tile factories were developed; however on the plans that discuss the area as a whole, the concepts for other areas should be considered. The tangible values were emphasized, in addition to that the document of the society, the tangible values should be researched. So a comprehensive documentation and management plan of the area with team members of different professions such as architects, city planners, historians, engineers, landowners as well as volunteers from local people should be improved. This study, which contains the documentation, assessment and development of principles on five of the brick and tile factories and study area, could be seen as a progress for the industrial heritage in Eskişehir.

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APPENDIX A

THE KILN TYPES IN THE BRICK AND TILE PRODUCTION

In the production process, the definition of the brick is necessary. The bricks are mainly made from local clay. Sand is sometimes added to get the right properties. A number of additives are added to the clay to increase the strength of the bricks, these include fuel wood, stone dust, rice-husks and other agricultural residues. Clay bricks require a soil with clay and sand combination of not less than 50 % by weight of the former and fired at high temperature (800-1000°C) to make it dense and hard.

The technology and spatial character of the industrial buildings and complexes are differed by the reason of industrial production type. In brick and tile factories, the production is progressed by stages and according to these stages, the spaces are formed. These stages are clay extraction, clay preparation, brick molding, firing and cooling, brick drying and storage. Firing is done by various kiln methods including Bull's Trench, Habla Zigzag , Hoffman, Tunnel Kilns… have been distinguished by fuel type, efficiency, position of their heat source, heat distribution and heat continuity.

a. Intermittent Kilns

The Kilns are closed and the internal temperature increased according to a schedule. After the firing process is complete, both the kiln and bricks are cooled. The kiln is left to cool sufficiently before the bricks can be removed. Due to the relative ease and cost of construction these are the kilns types primarily used in developing countries. One of the type that was used in Turkey between 1920 and 1950 is the Bulgarian Kiln.

b. Continuous Kilns

The fire is burning all the time. Bricks move through kiln or fire is moved through bricks within the kiln. There are types of continuous kilns:

- Hoffman Kiln (Continuous Chamber Kiln): The kiln was invented by Friedrich Hoffman and A. Licht in 1858, consisted of a series of single chamber kilns adjoined to each other. The Kiln is a permanent structure built entirely from building brick, inside and out, with a number of simple cast iron and steel non-structural components. The Kiln consists of a smokestack, approximately 70m high, connected to a main flue running the length of the kiln. On either side of the main flue there are arched firing chambers, each linked to the main flue via damper controlled under floor steam flues. the bricks remain stationary and the fire

moves through the kiln with help of a chimney.[177]

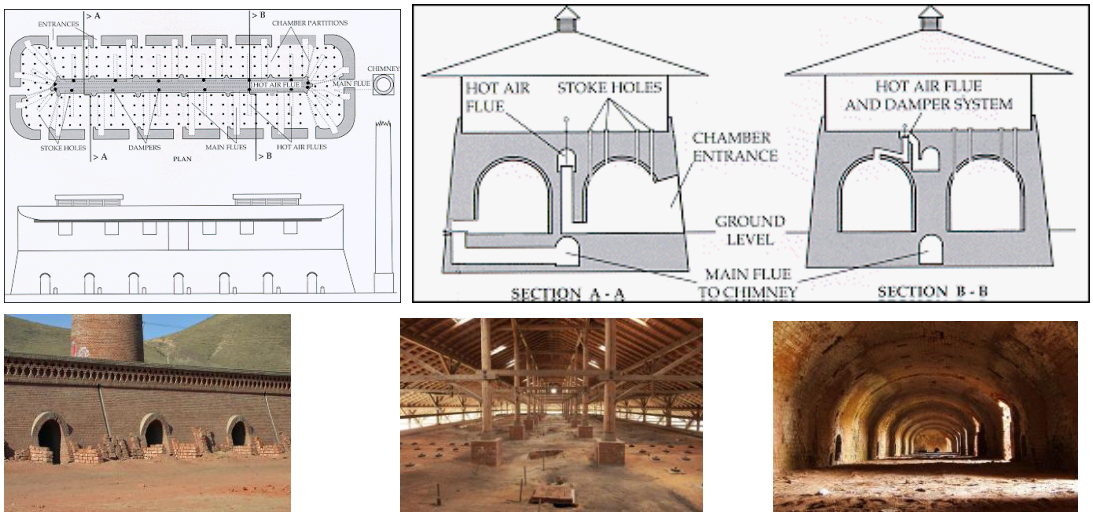

Figure A. 1: a) The plan and section of the hoffman kiln **b)** The dampers in the middle and stoke holes on the right and left **c)** a view from the chamber tunnel seeing the stoke holes under (*http://www.hablakilns.com/industry.html,* accessed on 10 April, 2011)

In the Hoffman Kiln, the clay was baked at a temperature of around 1,000° Celsius to produce the bricks and tiles. It consisted of a tunnel, divided into 12 to 24 chambers, all interconnected to each other and to a main flue connected to a chimney. Each of the chambers also had an opening which the bricks were loaded and unloaded.

Some Hoffmann kilns were fuelled by gas, but mostly the fuel was coal. The ceiling of an oven contained many rows of openings covered with air-tight metal caps which were known as stoke holes. Experienced stokers dropped a small amount of crushed coal through the holes above the chamber that was fired, using a small coal shovel. Right underneath each stoke hole, the bricks were arranged to form "fireplaces". The green bricks are set in a chamber and the entrance is bricked up and then closed using an ash and clay to prevent the ingress of air. the chambers, the temperature inside was high enough to spontaneously combust the coal that was dropped through the stoke holes. The ventilation of the chambers were provided through the main flues connected to the stacks. After firing the bricks are allowed to cool in the chamber before they are removed. The drying is carried out slowly to ensure that all the moisture is driven out of the bricks uniformly and that distortion does not occur. Once the bricks are dry then it is important to raise their temperature rapidly in order to maintain reducing conditions in the chamber. [178]

[177] Kiln Technology, *http://www.hablakilns.com/industry.html,* accessed on 14 September

[178] Russell, A., Vogel, R., 1999, "Evaluation of Hoffmann Kiln Technology", *Intermediate Technology Consultants,* England

-Tunnel Kiln: The Kiln was invented in Germany in 1877. In a tunnel kiln the heat source remains stationary while the brick move mechanically, facilitating mass production. The brick passed though three stages: preheating, firing, and cooling. Tunnel kilns receive bricks on track-mounted cars called kiln cars which has a seal mechanism made of a refractory material sufficiently thick to protect the metal . The materials are placed on cars that run on a track through a tunnel adjacent to the heat source. Throughout their preheating cycle, the bricks are subjected to increasing temperatures until the firing cycle is completed at 1066°C. Then the bricks are passed through the cooling stage. The cooler air enters the end of the tunnel via a blower and is collected at the end of the firing zone.[179]

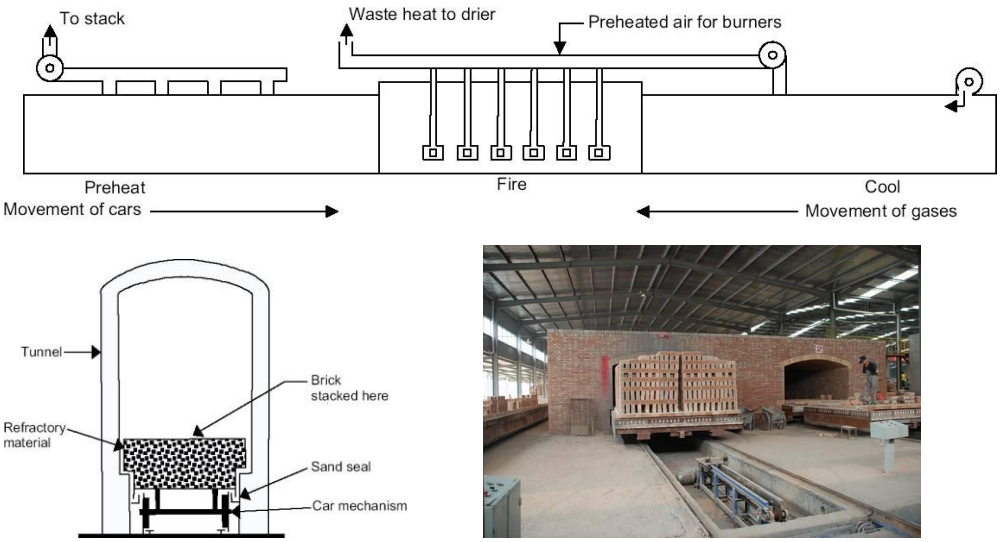

Figure A. 2: Tunnel Kiln Tecnology (*http://www.hablakilns.com/industry.html,* accessed on 10 April, 2011)

-Bull's Trench Kiln: The Kiln was invented in England in 1876. The Movable Bull's Trench Kiln is commonly used in India and many developing countries. This kiln uses movable metal chimneys which are lifted and man-handled by a team of workers into different positions as the fire moves through the kiln. Due to the high emissions, dispersed over a wide area, hard working conditions, the kiln was banned in many areas. The Improved Bull's Trench Kiln has a permanent, fixed brick chimney over 30 metres high. The chimney requires skilled bricklayers to construct and is costly to build. It has no roof and cannot be used during every season.

[179] Laefer, D., Boggs, J., Cooper, N., 2004, *Engineering Properties of Historic Brick: Variability Considerations as a Function of Stationary versus Nonstationary Kiln Types,* Volume 43, Number 3, Article 4, Journal of the American Instutite for Conservation, USA

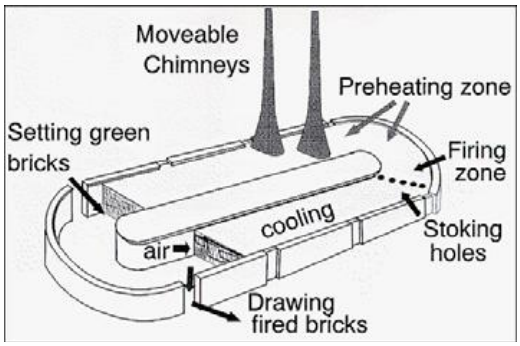

Figure A. 3: Schematic drawing of a MCBTK and smokestacks from a MCBTK in Kathmandu Valley (*http://www.hablakilns.com/industry.html,* accessed on 10 April, 2011)

-Habla Zig-Zag Kiln : The kiln was invented in Germany in 1927. The effective tunnel length of the Hoffmann type kiln may be increased by the building of zigzagged chambers. The zigzag kilns have a faster firing schedule than the Hoffmann kiln. However, they require a fan and therefore electrical power as air must travel a longer path and a simple chimney does not provide sufficient draught for air circulation. Fans provide a more steady draught than chimneys and can be better controlled.

The zigzagging walls are temporary structures of green bricks which may be sold after firing. The partition walls of dried green bricks, with a thickness of only one brick length and deflect the gases from the island to the outer wall. Habla kilns are of various designs: in some kilns the flues are returned from all chambers to the central island; while in others, some of the flues are returned to the outer walls. Every chambers are accessible through a wicket.

The Habla kiln is economical to construct and operate. Furthermore, the kiln has a long firing zone, allowing clays to be fired more easily. The long-firing path assists heat exchange between gases and bricks, thus improving fuel efficiency. Because the partitions are made of green bricks, less permanent brickwork has to be heated and cooled, thus adding to fuel efficiency.

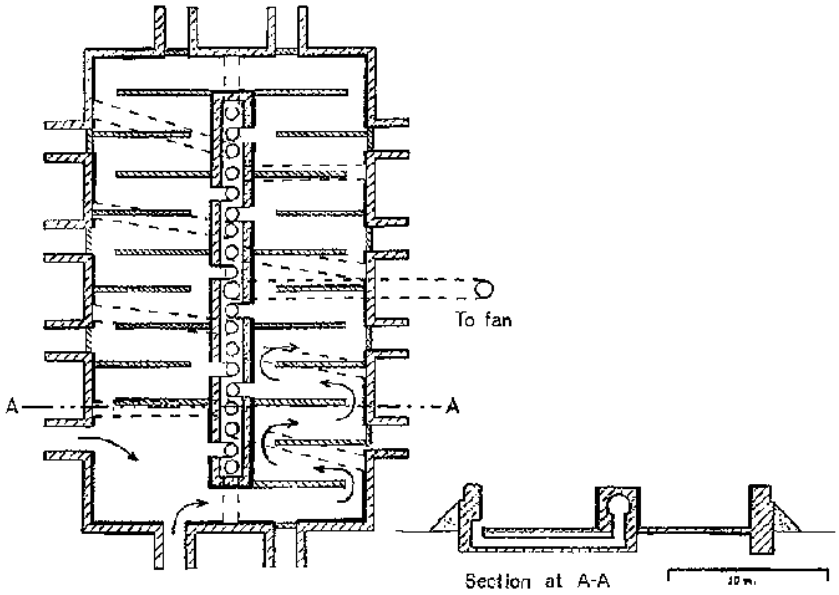

Figure A. 4: Schematic drawing of a Habla Zig-zag Kiln (*http://www.hablakilns.com/industry.html,* accessed on 10 April, 2011)

-Vertical Shaft Brick Kiln (VSBK): The kiln was invented in China (1958). Vertical shaft brick kiln (VSBK) consists of one or more shafts. Though the shafts can be constructed of various sizes, the optimum cross-section of the shaft is 1 meter x 2 meter having a production capacity of 1,35,000 bricks per month.

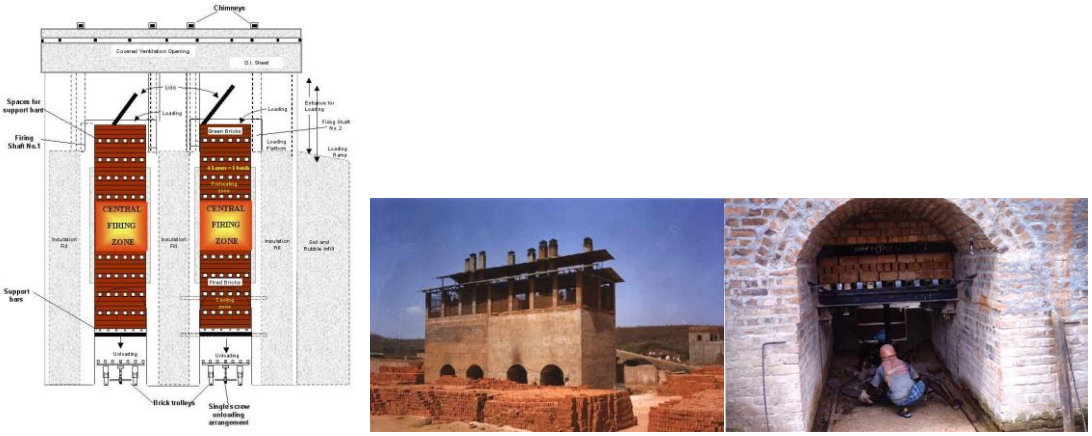

Figure A. 5: Schematic Drawing of single shaft VSBK and a four-shaft VSBK in New Delphi (*http://www.hablakilns.com/industry.html,* accessed on 10 April, 2011)

Dry bricks are loaded from top of the kiln. Bricks may be taken to the loading platform in different ways; such as using ramp of structure and bricks are carried manually or using

animals, using of winch and hoist system. One batch of well-dried green bricks is loaded in layers at the top at a time. A pre-measured quantity of crushed coal specific to coal and soil properties (5-20 mm size) is spread on each layer uniformly to fill the gaps between the bricks. Unloading of fired bricks is done from the bottom. A trolley is used for this purpose which is moved on rails along the length of the unloading tunnel. Lifting and lowering of the trolley is done using a screw jack mechanism. During unloading, the trolley is lifted so that the entire stack of bricks in the shaft rests on it. On lowering, the load of the brick stack is taken back by the support bars and the rest of the bricks are taken out along the trolley. The trolley is pulled out, cooled fired bricks are unloaded. Space is created for one batch at the top which is now ready for loading another batch of dry bricks.[180]

[180] Kiln Technology, *http://www.hablakilns.com/industry.html,* accessed on 14 September