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Questioning the Adaptive Reuse of Industrial Heritage and Its Interventions in the Context of Sustainability

Kağan Günçe[a], Damla Mısırlısoy[a]

Abstract

Industrial buildings are valuable heritage structures that should be sustained as well as historic buildings since the preservation of the traditional values in the context of conservation is important in terms of a sense of the continuity of the culture. Kadir Has University building has been selected as the case study of the research. Success of the conversion and interventions in terms of sustainability will be discussed. The aim of the study is to question adaptive reuse project of the Cibali Tobacco Factory as university within the framework of urban regeneration of Cibali district. The relation between adaptive reuse projects and its relationship among socio-cultural, economic, and physical dimensions of the sustainability, also its effects on the environment and region has been discussed. Adaptive reuse examples should not be accepted as single projects. Its contribution to the environment and the region is also crucial. Preservation of an individual building can be a catalyst to renewal of others. It can help the transformation of the whole area. There is always an interaction between the conversion projects and the environment. In order to achieve a successful conversion, appropriate functions should be given to the industrial heritage buildings according to the needs of the region.

Keywords

Conservation, adaptive reuse, industrial heritage, sustainability, urban regeneration

Historic environments represent knowledge, beliefs, and traditions of diverse communities. Additionally, it gives distinctiveness, meaning, and quality to the places that we live, providing a sense of continuity and identity (English Heritage 2008). In order to sustain the sense of continuity and identity, historic environments must be preserved. However, industrial heritage buildings should also be preserved within context of conservation of historic environments. According to TICCIH (The International Comittee for the Conservation of Industrial Heritage) (2003), "Every territory should identify, record and protect the industrial remains that it wants to preserve for future generations".

Conservation involves taking the existing and improving as it is. On the other hand, being able to show that today's standards of public safety, comfort and important legislative requirements are satisfied (Forsyth 2007). In time, heritage buildings may lose their original functions and become disused. Bringing these buildings back to life is possible by reusing with

[a]Eastern Mediterranean University, Cyprus

Correspondent Author:
Kağan Günçe, Faculty of Architecture, Eastern Mediterranean University, Famagusta, Cyprus, via Mersin 10 Turkey
E-mail: kagan.gunce@gmail.com

a new function. In recent years, new functions are given to buildings with historical value in order to continue to survive with a new life (Günçe and Hoşkara 2009).

Starting from the twentieth century, several efforts have been made in order to define the boundaries of conservation of industrial heritage, and also what should and should not be considered industrial heritage (Loures 2008). TICCIH (2003) defined industrial heritage as:

> Industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education.

An engagement of economic renewal with a conservation ethic may encourage the adaptive reuse of redundant buildings. Many industrial buildings offer an important opportunity to salvage of their history (Binney, Machin, and Powell 1990). The adaptive reuse of industrial heritage buildings and sites ensure opportunities for upgrading and development. On the other, there is a lack of rational and holistic methodology for the preservation and reuse of industrial heritage. The challenge is to find an effective approach a sustainable adaptive reuse of industrial heritage (Yu 2012). The purpose of the research is to question adaptive reuse project of the Cibali Tobacco Factory as university and to question its relationship among socio-cultural, economic, and physical dimensions of the sustainability, also its effects on the environment and region. Through the findings of the research, proposals have been given for a sustainable adaptive reuse of industrial heritage.

Cibali Tobacco Factory is located in Cibali area which was an industrial zone in Istanbul. After the decision of moving the industrial zone to another place, the area remains abandoned for a while. In 1980s, the area had decided to regenerate. Cibali Tobacco Factory was one of these industrial heritage buildings which are preserved and converted to Kadir Has University.

The method of the study is observation of the site, interviews, and the literature survey. The success of the conversion is questioned in terms of interventions to the industrial heritage, also in terms of economic and socio-cultural impact of the conversion to the region. The contribution of the new function to the sustainability is analyzed through the observations and interviews in the district.

ADAPTIVE REUSE AND SUSTAINABILITY

Building conservation approach has changed from preservation to a strategy for urban regeneration and sustainability. Adaptive reuse can convert heritage buildings into accessible and useable places and also it provides the added benefit of regenerating an area in a sustainable manner (Bullen and Love 2011). Many cities have started to realise that reuse of heritage buildings is a crucial part of any regeneration programme (Ball 1999).

Industrial heritage buildings represent a sustainable resource from past generations that can be "recycled" for new uses (Stratton 2000). In the last few years, reuse of industrial buildings and sites that have lost their original functions have become witness of the age. Bringing industrial buildings back to life by re-functioning is beneficial in terms of both culture and economy since the physical properties of these heritage buildings last longer than their function (Günçe and Hoşkara 2009). Adaptive reuse of heritage buildings is preferred because of being economic, proving cultural and historical sustainability, using manpower instead of energy, reducing energy consumption, and being ecologic. Adaptive reuse of historic buildings adopted as one of the aspects to achieve sustainable development in different countries

such as Atlanta, US, Canada, Hong Kong, North Africa, and Australia (Aydın and Okuyucu 2009). Sustainable reuse of industrial heritage is not a recent phenomenon. Industrial buildings have been reused for different purposes especially the ones that are different from those for which they were built (Falconer 2007). However, as a difference, today, adaptive reuse projects are done more consciously. The analysis of heritage buildings is mostly focused on the external architectural qualities of the structure and with little reference to its previous function. Also, there is none other than aesthetic criteria to determine the alteration for a new use project (Alfrey and Putnam 1992). According to Urbanism Environment Design (URBED)'s action research, the recipe for a successful reuse project boils down to five basic principles (Falk 2000):

(1) Shared vision that unites both the owner of the property and the local authority and other regulatory bodies, so that there is the minimum of time wasted in conflict;

(2) Impetus for collaboration, which may come from the promise of grants, or of the need to catch a wave of demand, or even sheer desperation at seeing a prominent building decay;

(3) Balance of uses, and also a balance between pilot projects, that can be implemented fairly quickly to build confidence, and flagship projects that help turn an area around;

(4) Driving force with the guts to take an innovative approach to development, to control and avoid all unnecessary costs, and to generate activity and interest;

(5) Financial package or process that generates the necessary yield to satisfy both private investors and also sources of grants.

The new function for the industrial buildings should be given according to the architectural characteristics of the building but also the characteristics of its region/settlement. Heritage buildings should not only preserve and sustain the building as a single object, should also revitalize its environment physically, socially, culturally, and economically. Successful regeneration brings social, economic, and environmental life back to an area, transforms places, strengthens a community's self-image and re-creates viable attractive places[1].

Adaptive reuse contributes to economic, environmental, and socio-cultural sustainability. Transferring heritage for further generations is a social responsibility and it is important to sustain cultural continuity. Socio-cultural sustainability is under threat because of the buildings do not to meet the needs of the today's requirements because of neglect, unconsciousness, and lacks of conservation plans. Preservation of heritage buildings, conservation of historical values, and giving new functions are effective factors for socio-cultural sustainability (Aydın and Okuyucu 2009).

REVITALIZATION OF HALIÇ AND CIBALI AREA

Haliç region had been used as harbour and shipyard during the Byzantine period. Then, in the Ottoman period and further, the region was faced with some changes and new additional functions were added to the buildings. Although these changes, Haliç has preserved its significance in terms of urban identity and memory. By the İstanbul Municipality, the transformation of the area is named as "culture and art valley" and there have been many conversion projects. In 2000, many municipalities (Beyoğlu, Eminönü, Fatih, Eyüp, Kağıthane, and İstanbul) came together to form "Haliç Municipality Union". The aim of the union was to provide infrastructure, planning, housing, finance, city management, social, cultural enterprise, protection of the user rights, solving environmental problems, recreation, tourism, culture and art activities and promoting the region (Elhan 2009).

Renovated industrial buildings around the Haliç are listed below:

(1) Silahtarağa Power Station;

(2) Brick Factory;
(3) Feshane-I Amire;
(4) Lengerhane;
(5) Taşkızak Shipyard;
(6) Cemialtı Shipyard;
(7) Kasımpaşa Mill Factory;
(8) Haliç Shipyard;
(9) Cibali Tobacco Factory.

Haliç is an important trade, recreation, and culture center of the city. It is one of the most important region of the city in terms of architectural heritage, thus it becomes the focal point of conservation and renovation projects. Many industrial heritage buildings have been renovated and today are using with a different function (see Figure 1).

The heritage buildings in the region should not be accepted as single objects; otherwise the area may lose the originality in terms of identity. The history and meaning of Haliç should be thought as a whole during adaptation process of the heritage buildings.

HISTORY OF THE CIBALI TOBACCO FACTORY

Cibali Tobacco Factory is an example of cultural heritage in the early industrialization period. It was designed during Sultan II. Abdülhamit period in 1884 by architects H. Aznavur and A. Vallaury and re-designed by Eugene Bottazzi in the following years (Alper 2003).

Until 1984, building was used as a factory and remained empty until 1997 (see Table 1). There were many volunteers to rent the historic building and use it for different functions because of its strategic location. Finally, it has been decided to convert the factory to university building and the building has been rented to Kadir Has for 49 years. The renovation project was prepared by Dr. Mehmet Alper. In 2000, conversion process had started and two years later, in 2002, building was opened as Kadir Has University (Alper 2008). The project won the Europe Nostra Prize in 2003 with two of its blocks A and B.

The most significant characteristics of the building are different historic layers. The building consists of four different historic layers as a Byzantine water tank from the thirteenth century and an Ottoman Bath from the sixteenth century at the basement floor, tobacco factory which belongs to the nineteenth century and the new additions which were added in 2002 (Mısırlısoy 2011). Four different layers of the building are represented as below:

(1) The thirteenth century Byzantine Water Tank;
(2) The sixteenth century Ottoman Hamam;
(3) The nineteenth century factory;
(4) The twenty-first century new additions for university function.

Restoration was successful in terms of preserving structure of the building, load bearing parts, and originality of the building. The only interventions were about the division of the space with partitions and the adding necessary additions (Mısırlısoy 2011).

ADAPTIVE REUSE OF CIBALI TOBACCO FACTORY AS UNIVERSITY

Historic, aesthetic, and socio-cultural values and their preservation were one of the most important aspects during adaptation process. Building has different historic layers, so the main concept of the renovation is to preserve all layers rather than emphazing one. Minimum intervention was the main goal of the renovation. The new function of the building required new additions which are inspired from the existing building. Different layers have been connected with new additions (see Figure 2).

Today, old factory building is used as administration and educational activities of the university. After the conversion, the factory building has been adapted for its new use. Unsuccessful additions built after the construction of the factory have been removed since they did not have the same language with the existing building. Since the function

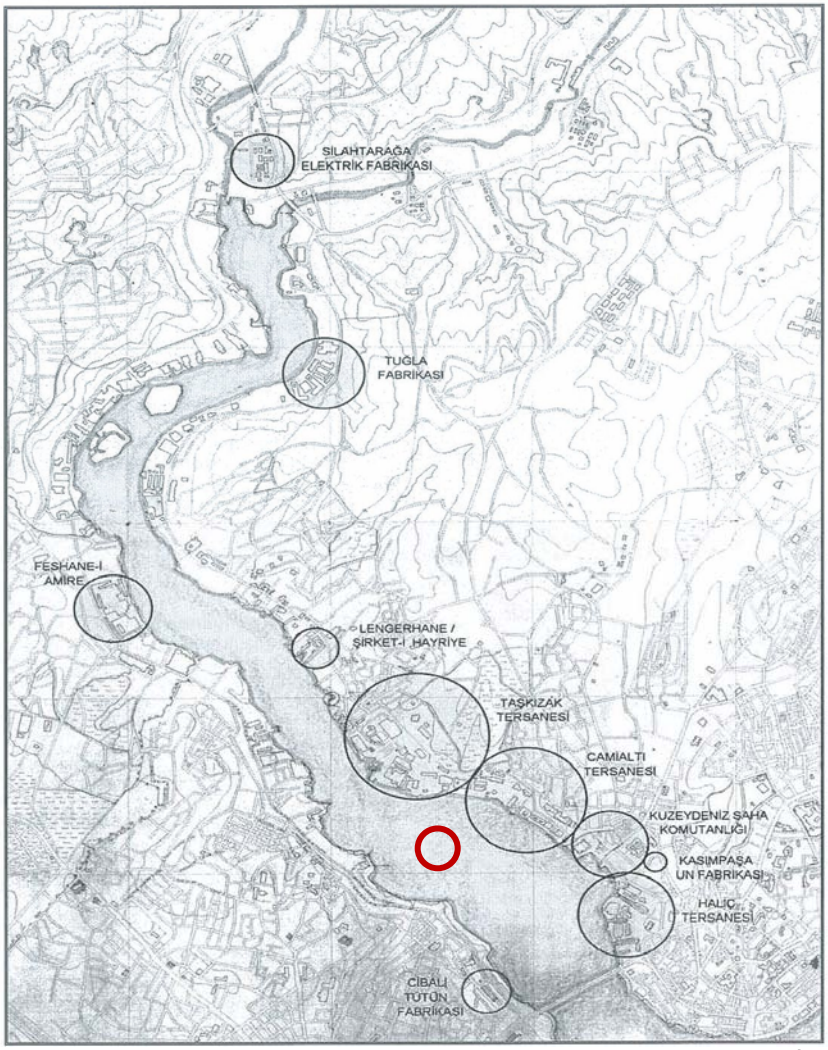


Figure 1. Industrial Heritage Buildings Around Haliç. Source: Köksal (2005) from İstanbul Municipality Map Archive.

Table 1. General Information About Cibali Tobacco Factory

Original name: Cibali Tobacco Factory	
Name of the building: Kadir Has University	
Location: Istanbul, Turkey	
Original	Intervention
Construction date: 1876	Construction date: 2002
Old function: Tobacco Factory	New function: university
Architect: H. Aznavur and A. Vallaury	Architect: Mehmet Alper
Important dates	
1884-1984: Tobacco Factory 1985-1997: empty 1997: rented to Kadir Has for 49 years 2000-2002: restoration process 2003: won Europa Nostra Prize	

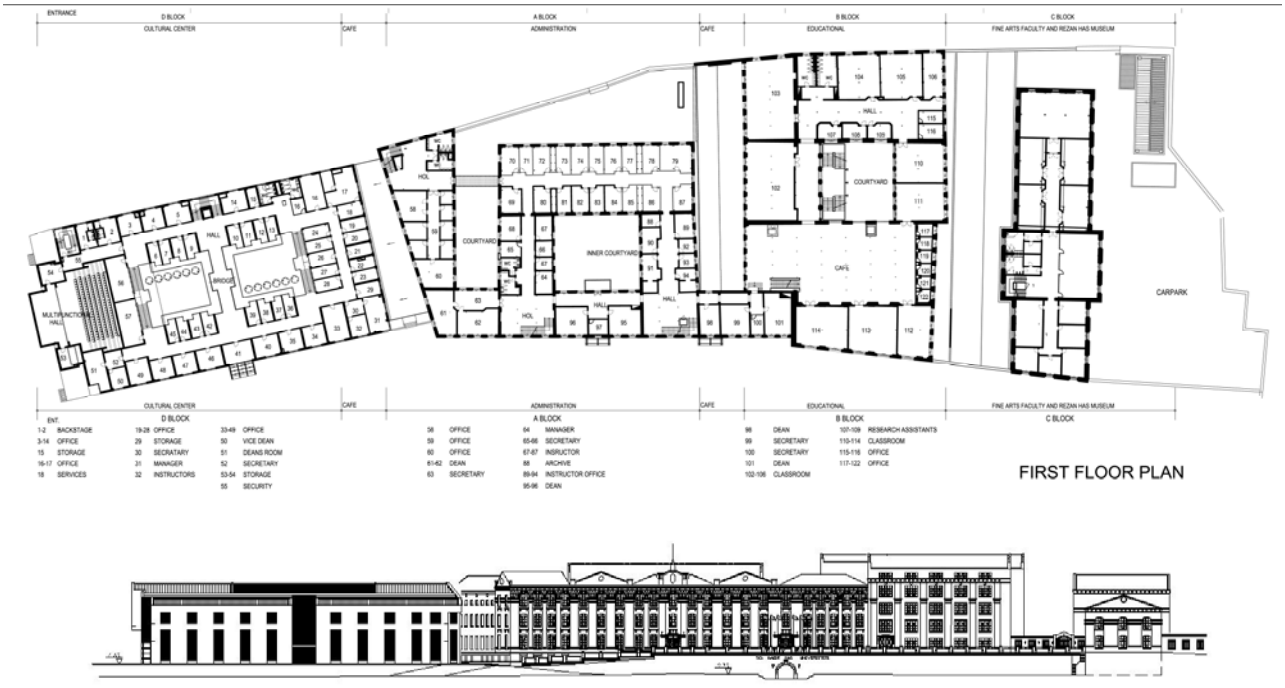


Figure 2. Drawings of the Kadir Has Building. Source: Mehmet Alper's personal archive.

of the building has been changed, space organizations of the new function have been modified by keeping original walls as it is and proposing partition walls.

At the basement floor of the university, a museum has been designed named as Rezan Has museum which contains temporary and permanent exhibitions. Also, there is a Byzantine water tank from the thirteenth century and an Ottoman Bath from the sixteenth century, which is exhibited as a part of the museum (see Figure 3). This part of the building is fine arts faculty of the university. The historic walls have been preserved and new floors were inserted, which was supported with steel columns. Steel columns continue until museum floor, covered with glass at some points in order to have the visual contact between museum and fine arts exhibition hall.

There is a contemporary addition attached to the existing factory, functioned as cultural center of the university. The new addition respects the contemporary conservation principles. It is in harmony with the existing in terms of colour, proportion, and space organization. Also, it has the same proportion of windows with the existing facade. Transparent boxes constructed with steel and glass, functioned as offices were projected toward the inner courtyard.

In general, the adaptive reuse project was successful in terms of preserving the cultural significance and identity of the industrial heritage. Contemporary conservation principles have been followed during restoration project.

However, unfortunately, today there is not any part that belongs to the industrial archaeology related to machinery and the system of the factory. TICCIH (2003) stated, "The value and authenticity of an industrial site may be greatly reduced if machinery or components are removed or if subsidiary elements which form part of a whole site are destroyed". Only traces related to identity of the original function are the machine management panel on the basement floor and old photos of the factory. During the restoration process of the building the parts that belong to

Cibali Tobacco Factory, 1884[2]

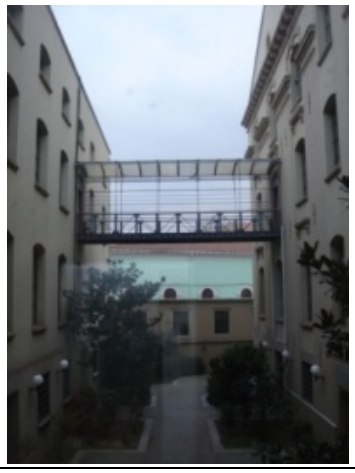
Cibali Tobacco Factory, 1884[3]

Cibali Tobacco Factory, 1884[4]

New added block*

Front facade*

Cafeteria*



Bridge addition*

Ottoman Hamam in Museum*

Office spaces*

*Photos have been taken by Damla Mısırlısoy in 2014

Figure 3. Visual Media of the Kadir Has Building.

nineteenth century and twentieth century, are kept as it is. Some parts that were later addition and the fourth floor had been demolished (Alioğlu and Alper 1998).

EVALUATION OF KADIR HAS UNIVERSITY BUILDING IN THE CONTEXT OF SOCIO-CULTURAL SUSTAINABILITY

The building is located in a residential district and most of the people living around are low-income and low-educated people. The needs of the local people according to the analysis were education, social activities, cultural activities, and security. Thus, new function of the building was selected as educational. The aim was to increase the education and cultural level of the region by proposing social and cultural activities for local people.

The main concept of the conversion is the

interaction of the building with the local people living around. There are some facilities for them, such as free computer courses, lectures for high school children by university students, sport activities, free museum entrances, internet and library facilities. Adaptive reuse has been contributed to the local economic and cultural development to the whole region.

The university students have started to rent the houses around the campus and this situation leads house owner to renovate their houses and rent them to the students. With the help of this, heritage buildings have managed to survive. At the same time, it helped stakeholders in making profit since the residential buildings around the campus were unrepaired abandoned buildings.

The building has been rented to the university for a certain period. The period of rent is also important in controlling the process of the management and sustainability of the building. If the authorities decide that building is not sustainable no more with its new use and heritage building has harmed due to the new function, they should be able to make necessary interventions.

In general, the project has positive effects of transformation on its close vicinity. Cibali Tobacco Factory is a successful conversion example, since it was restored within the frame of modern conservation principles and made positive contributions to physical and social development of its close neighbourhood. Transformation of the factory building to the university in that district has encouraged the opening of new restaurants. Also, it has led restoration of heritage buildings in its close neighbourhood which was a district of ruins. Besides, the university has made positive contributions to the community by projects such as improvements of the roads, forestation of park area, and training of the community (Ozden 2012). Kadir Has foundation is in contact with the district municipality and this situation has also made positive contributions in the implementation of the projects.

On the other hand, there are some weak points of the project which have been identified by a survey done by Akbelege. According to the questionnaire done by Akbelege (2004) with the contextual users, there are some problems like lacks of parking area, noise pollution, and security problems in the access to the university. Users also complained about the realising of the water waste into the sea. Thus, it was observed that in general, the conversion was successful and building is sustainable.

CONCLUSIONS

Cibali is an important heritage building in transferring history and culture to the further generations. University is not just a conversion of the building itself, but it has also foster transformation of the whole district. It has act as a catalyst in the neighbourhood.

The conversion of the factory into university has contributed to socio-cultural development of the district. New commercial buildings have been opened and people have started to make investment to the district. It also encouraged restoration of other heritage buildings and whole district has started to develop. For a long lasting adaptive reuse, heritage buildings should be socio-culturally sustainable. Otherwise, it is not possible to sustain the building physically. Kadir Has University is a successful conversion in terms of sustainability. The restoration and the additions of the buildings have been done within the framework of contemporary conservation principles. Industrial building has been preserved physically; also the project has made contribution to the community and local economy.

Many industrial buildings are valuable heritage buildings that should be conserved as well as the historic buildings since the conservation of these traditional values in the context of conservation and revitalization of architectural heritage are in a sense the continuity of the culture. They should be

conserved to transfer this information for further generations.

Public awareness should be increased on conservation of industrial heritage through restoration and reuse of the industrial buildings. Government should encourage local people in contributing preservation of the industrial heritage buildings since they are evidence of the heritage in related periods. Public authorities should actively explain the meaning and value of industrial sites through publications, exhibitions, television, the internet, and other media.

Analysis should be done in decision-making process to find the most appropriate function for industrial buildings, considering the social, economic and physical benefits of the adaptive reuse in different dimensions for a sustainable heritage adaptation.

Preservation and restoration of the industrial heritage should be encouraged. Instead of destroying, they should be sustained since they are evidence of the people's lifestyle and culture living in or around it. Conserving architectural heritage and giving new functions according to their location, size, and potential can help to future generations to understand where they are coming from. By adaptive reuse of industrial heritage as public places, culture and history of past will be safe and sustained for next generations.

Notes

1. Retrieved January, 2015 (http://www.helm.org.uk).
2. Retrieved January, 2015 (http://www.khas.edu.tr).
3. Retrieved January, 2015 (http://www.khas.edu.tr).
4. Retrieved January, 2015 (http://www.khas.edu.tr).

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Bios

Kağan Günçe, Ph.D., associate professor, Faculty of Architecture, Eastern Mediterranean University, Famagusta, Cyprus; research fields: architectural design theory, architectural form, housing, human and physical environment, children and architecture, traditional architecture, and architectural heritage.

Damla Mısırlısoy, Ph.D. candidate, Faculty of Architecture, Eastern Mediterranean University, Famagusta, Cyprus; research fields: conservation of architectural heritage, architectural design theory, contemporary addition design in historic buildings, and adaptive reuse of heritage buildings.