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INTEGRATIVE EVALUATION OF URBAN REGENERATION EFFECTS: CASE OF ESPARK [1]

BİR KENTSEL DÖNÜŞÜMÜN ETKİLERİNİ BÜTÜNCÜL DEĞERLENDİRMEK: ESPARK ÖRNEĞİ

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Öz: Amaç: Bu araştırma, kentsel tasarımın farklı boyutları çerçevesinde dönüşüm ile oluşan değişimin değerlendirilmesine yönelik bir çalışma ortaya koymayı amaçlamaktadır. **Yöntem**: Çalışma literatür ve saha araştırması olmak üzere iki aşamadan oluşmaktadır. Literatür incelemesinde kentsel tasarımın boyutlarına yönelik teorilerin sentezlenmesi ile değişimin değerlendirilebilmesinde kullanılacak morfolojik, algısal, sosyal, görsel, fonksiyonel ve zamansal boyutların göstergeleri belirlenmiştir. Eskişehir'de atıl fabrikalar bölgesinde gerçekleşen Espark projesi, belirlenen göstergeler çerçevesinde dönüşüm öncesi ve sonrası plan incelemeleri, saha araştırması, kurumlardan alınan veriler ve anket çalışması ile değerlendirilmiştir. **Bulgular**: Eski fabrikaların yıkıldığı alanın büyük bir yapı ile değişimi sürecinde, fabrikaya ait bazı birimlerin yaşatılması kentlinin hafızasındaki yerini korunmaya yardımcı olmuştur. Bununla birlikte projede fonksiyonel ve görsel boyutlar ön planda tutulurken, morfolojik, sosyal ve algısal boyutların etkilerine daha az önem verildiği belirlenmiştir. **Sonuç**: Kentsel tasarımın boyutları ile dönüşüm sonrası oluşacak değişimin değerlendirilebileceğine yönelik tanımlanan varsayımsal model, saha araştırması ile test edilmiştir. "Dönüşümün mekân oluşum sürecinde birçok boyutta değişimler oluşturduğu" ve "bu değişimlerin bütüncül değerlendirilmesi ile geçmişe ait bazı referanslar barındırması ile kentin hafızasındaki yerini koruyacağı ve yeni kimlik öğesi haline geleceği" hipotezleri doğrulanmıştır.

Anahtar Kelimeler: Değişim, Eski Sanayi Dönüşümü, Kentsel Tasarımın Boyutları, Eskişehir, Espark

Abstract: Aim: This research aims to reveal a study directed at the evaluation of the change formed by regeneration in the frame of urban regeneration's different dimensions. **Method**: The study consists of two phases namely literature research and field research. In literature research; the indicators of morphological, perceptual, social, visual, functional and temporal dimensions which will be used in the evaluation of the change by synthesizing the theories directed at the dimensions of urban regeneration. In the next phase, Espark Project, realized in the inactive factory region in Eskişehir, is evaluated by the means of plan investigation for the situation before and after regeneration in the frame of determined indicators, field research, data from the institutions and survey study. **Findings**: In the regeneration process of the area where the old factories were demolished, the preservation of the flues and some units of factories helped it to preserve its place in citizens' memory. However, it is determined that, functional and visual dimensions are prioritized in the project while the effects of morphological, social and perceptual dimensions are given less importance. **Conclusion**: The hypothetical model identified to evaluate the change formed after the regeneration with urban design dimensions is tested through field research. The hypotheses of "regeneration constitutes changes in many dimensions in space formation process" and "by integrative evaluation of these changes and having some references belonged to past, it will conserve its place in citizens' memory and become new identity item" are verified.

Key Words: Change, Old Industry Regeneration, Dimensions of Urban Design, Eskişehir, Espark

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INTRODUCTION

The regeneration projects, designed with the strategies based on the property market subjected to culture, tourism and commerce in the areas where become collapse land by the site selection of production outside the city in developed countries, become a vehicle for these areas to gain importance and develop (Görgülü, 2005: 46).'Brownfield' area is the land which has been previously developed, including derelict and vacant land, which may or may not be contaminated (Dixon, 2007: 2381). The management, rehabilitation and return to beneficial use of brownfields continued satisfaction of human needs for present and future generations in environmentally sensitive, economically viable, institutionally robust and socially acceptable ways within the particular regional context (Rescue, 2003: 153).

There is growing interest in brownfield regeneration across world, but it tends to focus on economic factors, such as job opportunities and commercial uses, and not the ecological, historical and visual properties of these sites. When regeneration programmes do not integrate local community views about perceived quality of the landscape, a lack of acceptance and thus negative public reactions are likely to result. For brownfield regeneration projects to be effective, they should explore community views and consider all the functions that regenerated sites can perform, in addition to mere economical functions (European Comission, 2013: 12). "Changes in urban built environment" change also the morphological, functional, visual, contextual, temporal and social characteristics of the urban built environment. These changes provide the concrete observation of alteration. The changes can cause positive or negative effect on the character of place one by one or as a result of a quantitative accumulation (Ünlü, 2006: 65; Carmona et al., 2003: 35-57). Today urban design is placed on the focus of creating a better space for humans by paying regard to not only the physical structure of the space but also the psychological structure it will create (Özdemir and Ocakçı, 2017: 74). It is necessary for the regeneration formed in urban space to aim revealing characteristics special to space itself and bring the space in character and enhance the standards in development depending on the change by handling integrally the different dimensions of urban design (Onaran and Sancar, 1998: 543; Carmona 1996: 53; Hall, 1996: 229; Ünlü, 2006: 65).

AIM

This article aims to reveal a conceptual and experimental study directed at the evaluation of the change formed by the regeneration in the frame of different dimensions of urban design. The change occurred in the city center after regeneration can cause negative effect

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on the character of an urban development as well as it can strengthen the character of that place. In this sense, not only the formation of plan decisions but also the evaluation of the negative and positive effects of the change brought by these plans on urban design detail is important. The factory region in Eskişehir city center, where many factories have been demolished and other ruined ones are not active, become a center of attraction for regeneration projects and the produced projects caused change of urban development character. Espark shopping center as the first one of the projects in this area is handled in the study because it is an important project to be evaluated from the point of its effect on the revival of an old industrial area, urban development and city identity. When the quality of the studies about Espark summarized in literature review chapter are evaluated, this study becomes different as it integrally handles the morphological, perceptual, social, visual, functional and temporal dimensions of urban design.

SCOPE

In the study, the dimensions of urban design are integrally handled in the frame of measurable indicators. An example of an old industrial area where is completely transformed is selected for providing the evaluation of these dimensions. The spatial boundary of the study is Eskişehir Espark Shopping Center and the time boundary is formed with the changes it passed through between 1956 and today. A research method giving opportunity for a systematic investigation in the frame of change, regeneration and the dimensions of urban design is formed. In the scope of this study, both conceptional and experiential outcomes are revealed.

METHOD

The study is formed of two phases namely literature and field research. The theories directed at the dimensions of urban design are synthesized from different references through literature review. The morphological, perceptual, social, visual, functional and temporal dimensions of urban design is evaluated through an integrative point of view based on the book of Carmona and fri. (2003) to investigate the change formed after regeneration with the enlightenment process gained from this synthesis. The indicators determined as a result of the literature review are evaluated in the frame of before and after plan review, field research, the data taken from Eskişehir Municipality, Tepebaşı Municipality and Eskişehir Conservation Board Region Directorate and the survey study done with the Espark users. Evaluation criteria and methods within the scope of the study are shown in Table 1.

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Table 1. Evaluation Criteria in The Study

Urban Design Dimensions	Key Words About Dimension	Evaluation Criteria
Morphological Dimension	Land Uses	City Plans, Comments
	Building Structures	Field Research, Photos
	Plot Pattern	City Plans
	Street Pattern	City Plans, Comments
Perceptual Dimension	Identity	Survey Results, Photos
	Structure	Field Research, Pictures
	Meaning	Survey Results
Social Dimension	Relationship Between People and Space	Survey Results
	Public Life	Survey Results
	The Notion of Neighbourhoods	Survey Results
	Accessibility	Survey Results
	Safety and Security	Survey Results
Visual Dimension	Sitting	Field Research, Photos
	Massing	Field Research, Photos
	Scale	Survey Results, Photos
	Proportion	Survey Results, Photos
	Rythm and Materials	Survey Results, Photos
Functional Dimension	Comfort	City Plans, Field Research
	Relaxation	Photos
	Passive Engagement	Field Research
	Active Engagement	Field Research
	Discovery	Field Research
Temporal Dimension	Time-Changing Places	Survey Results
	Period Uses	Survey Results

The survey study is done face to face with 100 people who have lived in Eskişehir at least for 10 years to make use of the information about the area both before and after the regeneration.

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The survey study is prepared in 5 point likert scale with 5 categories, 9 basic questions and 55 evaluation criteria. First category consists of questions related to demographic structure directed at determining the participant profile. Second, third and fourth categories comprises of questions directed at evaluating the effects of regeneration with temporal, visual, social and perceptual dimensions. Fifth category includes questions related to urban identity. It is necessary to emphasize that the survey study is not the only tool used in the study directed at the evaluation of the project on the basis of urban design dimensions. In this scope, in survey study there are not any questions about morphological and functional dimensions. The morphological and functional dimensions are evaluated through planning studies, field study, photographs and comments. For temporal dimension "*frequency of visit to Espark in summer and winter months, visiting times and which entrance of Espark they use*" are asked to the participants. The participants are asked for perceptual dimension to evaluate if the area become actively used, its recognizability increased, it revived trade, it increased cultural facilities, it changed social relations, it increased vehicle and pedestrian circulation, it formed sound pollution by transforming into shopping center. The questions about visual and social dimensions are prepared together as the indicators include questions in similar quality. For visual and social dimensions it is asked from the participants to evaluate the size of shopping center, the height of shopping center, the sufficiency of open areas, the sufficiency of open car park, the situation of the materials used and its architecture, sufficiency of the safe routes for disabled people, children and elders, sufficiency of the safety in and around the shopping center and the sufficiency of the socio-cultural activities for *evaluating the physical condition of Espark*. Also it is asked how and with what purpose they come to the area. *For evaluating the usage of the area before Espark*, the participants' situations of knowing that it was a tile factory before, seeing the area when both there was the tile factory and there was empty after the demolition of the factory, knowing that the two flues in front of the shopping center and the cafes are a part of the tile factory are queried. *For the evaluations related to the identity,* it is asked from participants to evaluate the situations of transforming into something different than a shopping center, conserving the factory while transforming into shopping center and feeling satisfaction or discomfort for demolition of the factory while transforming into shopping center. The data gathered from the survey study done with the Espark users in December/2017 is analyzed in a database formed in the IBM SPSS Statistics 22 program. For survey evaluations, the findings directed at the urban design dimensions are

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handled and interpreted via frequency distributions.

RESEARCH RESTRICTIONS

There are two basic restrictions of the study. First, the selection of the people, who know the process of regeneration from old industry area into shopping center, for survey study, second making use of plan reviews and field searches alongside of survey data.

RESEARCH PROBLEM

Regeneration projects cannot produce politics about increasing the qualitative properties of the urban built environment, but improves a quantitative understanding focusing on morphological and functional characteristics of the urban built environment. In this sense, it is necessary to draw a frame in urban design dimension for plan decisions to be produced according to the characteristics of the place and give opportunity for directing the changes in urban built environment. The starting point of the study is formed by the discussion of the questions: 1- how the project realized in an area where gained ground in citizens' memory could transfer the traces of the past to the future, 2 – how the positive and negative effects of the new project on morphological, functional, visual, social, temporal and perceptual dimensions can be evaluated.

RESEARCH SUB-PROBLEMS

On the old factories region including a quite wide area, there are the most known hotels, the most expensive dwellings and social units where the most elite parts of Eskişehir spend time. As Espark shopping center was built here and it carried the traces of the factory it replaced, the problems came up such as "is it enough to conserve the place in citizens' memory or not and does it become a new identity element or not"? Directed at these problems, the existence of the consciousness about the area being a tile factory before, the two flues in front of the shopping center and the cafes near Espark are parts of the tile factory and the effects of the change formed by the regeneration are discussed.

RESEARCH HYPOTHESES

The hypotheses in this article are determined as follows depending on the theoretical ground outlined above:

H^1: Regeneration constitutes changes in morphological, functional, visual, social, temporal and perceptual dimensions in the process of urban space formation.

H^2: If these changes in different dimensions are evaluated integrally and the values as factors of cultural heritage belonged to the past are left as references in the regeneration, then it will be possible to design a space conser-

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ving its place in citizens' memory and becoming a new identity element.

THEORETICAL STUDIES SUMMARY

Urban study has become one of the concepts that the planners and designers mostly discourse since the last half century. There are many studies handling and categorizing the urban design dimensions in academic literature although its scope is wide and boundaries are generally fuzzy and contradictive.

Kevin Lynch (1981:118-119) identified five dimensions of urban design in his book "A Theory of Good City Form": Vitality, sense, fit, access and control. Bentley et al., (1985: 10-12), during the late 1970s and early 1980s, at the Oxford Polytechnic formulated an approach to urban design, published as "Responsive Environments: A manual for urban designers". The approach respectively focused on seven key issues: permeability, variety, legibility, robustness, visual appropriateness, richness and personalisation. It was later suggested that resource efficiency, cleanliness and biotic support be added, to include the ecological impact of urban forms and activity patterns. Ali Madanipour (2006: 174) in his paper "Roles and Challenges of Urban Design" remarked that it is necessary to take into account a wide range of considerations. Therefore, a multi-dimensional viewpoint is required, which combines political, economic and cultural aspects of urban design and development. Allan Jacobs and Donald Appleyard (2008: 115) in their paper "Towards an Urban Design Manifesto", suggested seven goals that were 'essential for the future of a good urban environment: Liveability, identity and control, access to opportunities, imagination and joy, authenticity and meaning, community and public life, urban self-reliance, an environment for all. Carmona (2014: 16) in his paper "The Place-shaping Continuum: A Theory of Urban Design Process" identified four key place-shaping processes: design, development, space (or place) in use and management. These begin with design, yet despite the foregrounding of the term in the very notion of 'urban design', other processes are equally and often more important in determining how the built environment is shaped.

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Table 2. Authors Working About Urban Design and Dimensions

Author and Publication	Classification of The Urban Design Dimensions
Lynch, 1981	Vitality, Sense, Fit, Access, Control
Bentley, 1985	Permeability, Variety, Legibility, Robustness, Visual Appropriateness, Richness and Personalisation
Carmona, Heath, Oc and Tiesdell, 2003	Morphological, Perceptual, Social, Visual, Functional, Temporal
Madanipour, 2006	Political, Economic and Cultural
Jacobs and Appleyard, 2008	Liveability, Identity and Control, Access to Opportunities, Imagination and Joy, Authenticity and Meaning, Community and Public Life, Urban Self-Reliance, an Environment for All
Carmona, 2014	Design, Development, Space (or Place) in Use and Management

In studies done by Bentley in 1985 and Carmona in 2014, social and visual dimensions were mentioned. The functional dimension of urban design was firstly placed in the classification of Jacobs and Appleyard in 2008. It can be said that, the morphological dimension of urban design was not mentioned until the study done by Carmona, Heath, Oc ve Tiesdell in 2003.

Many researches have been done about urban design dimensions and different dimensions were asserted. In this article, a study focusing on the 6 dimensions of Urban Design mentioned in the book of Carmona, Heath, Oc ve Tiesdell named “Public Places and Urban Spaces” is made. The classification of Carmona and friends is adopted in this study because it was handled in a wider context although it resembled the dimensions identified in studies done in different times.

Espark project is a project which subjects to many academic studies as it is a pioneer project in Turkey aimed at the regeneration of an old factory region into a shopping center and an example for changing shopping spaces. The review of the studies done before about Espark and their scopes is important in the point of revealing the originality of this study.

In the thesis named “The Development Progress of Shopping Places Case Study: Eskişehir” by Gökdoğan in 2006; the trade areas of Eskişehir were investigated and the plan schemas of shopping centers were given. As Espark was under construction when this thesis was written, the site plan and floor plans were interpreted. It is mentioned that it will be a shopping center which is expected to draw attention.

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The thesis named "The Stages of the Change and Transformation of the Factories District in the Timespan of Industrialization of the city of Eskişehir" prepared by Baykal in 2010 mentioned all examples of regeneration in factory region. It is indicated that some traces were conserved while tile factory was transforming into Espark.

Tülce 2012 investigated the regeneration of brick and tile factories in Eskişehir in the thesis named "The Conservation Principles for the Brick and Tile Factories In Eskişehir". The inner, outer and economic values of Espark was evaluated and swot analysis was made.

In the thesis named "Changing Identity: Case of Eskişehir" written by Hakyemez in 2016, all of the important regions in Eskişehir were extensively studied and the changes with all directions were transferred. It is indicated that Espark is located in old factory region and its change was reviewed via photographs.

Kandemir handled Espark case in the change of factories chapter in the article named "Urban Identity Transformation of Eskişehir - An Anatolian City" while investigating the factors changing the city identity of Eskişehir.

Kaçar 2017 compared the cities of Ruhr and Eskişehir for being industrial areas in the paper named "Legibility of Industrial Sites: Way-Finding in the Ruhr, The Europan Capital of Culture 2010, as a model for Industrial Sites in Eskişehir, Turkey", and indicated that the factory was demolished and only some units exist today in Espark case. But in the Ruhr region successful regeneration projects were implemented.

Table 3. The Scope of the Works Dealing with Espark

Author and Publication	Scope of the Work that Deal with Espark					
	Morphological	Perceptual	Social	Visual	Functional	Temporal
Gökdoğan, 2006,	*				*	
Baykal, 2010	*	*		*		
Tülce, 2012	*	*		*	*	
Hakyemez, 2016	*					
Kandemir, 2017			*	*		
Kaçar, 2017			*		*	

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As it is seen in Table 3, in the studies about Espark generally the morphological dimensions and the changes in the area was evaluated, there are a few studies about perceptual and social dimensions and there are no studies relates to temporal dimension. There is no studies investigating Espark in an extensive way including 6 dimensions of urban design. This study is separated from others with these properties.

URBAN DESIGN DIMENSIONS

The dimensions handled in this study are the ones handled by Carmona, Heath, Oc and Tiesdel and they identified the key characteristics of successful spaces (Figure 1).

The Morphological Dimension

Urban morphology is related to shape and form of the settlements. Morphologists shown that settlements could be seen in terms of several key elements, of which Conzen (1960) considered land uses, building structures, plot pattern and street pattern to be the most important (Carmona, Heath, Oc and Tiesdel, 2003: 202).

In general terms, it has showed and discussed the contemporary preferences for urban block patterns and gridded, permeable street layouts (Carmona, Heath, Oc and Tiesdel, 2003: 80).

The Perceptual Dimension

An initial concern with environmental images has been supplemented by work on symbolism and meaning in the built environment. The environment can be considered as a mental construct, an environmental image, created and valued differently by each individual. Lynch did many studies in this subject. According to Lynch, workable environmental displays requires three properties: identity, structure and meaning (Lynch, 1960: 8; Carmona, Heath, Oc and Tiesdel, 2003: 89).

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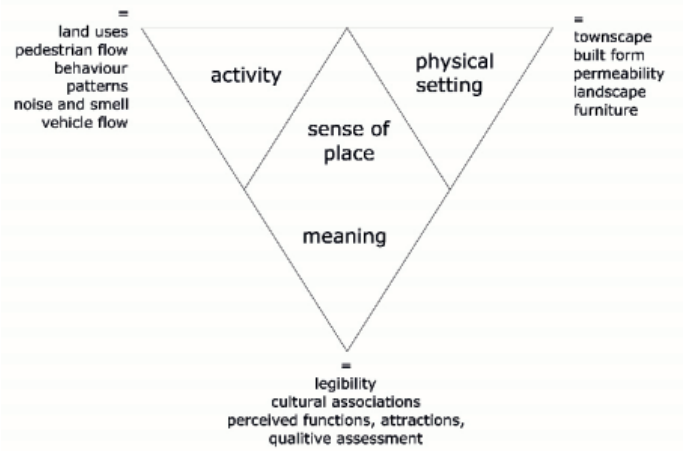

Figure 1. Key Attributes of Successful Places

*Carmona, Heath, Oc and Tiesdel, 2003: 100

The Social Dimension

Urban designers affect human activities and social lives by forming the environment. 5 different concepts directed at the social dimension are important: the relationship between human and space, public areas and public life, neighborhood concept, safety and accessibility. Human and space affect and change each other and this is mutual. Public life and neighborhood concept includes especially the production of spaces where people interact. Safety is one of the most important factors affecting the space usage density. Accessibility can be provided with the existence of transportation types such as pedestrian, vehicle, public transportation, bicycle, etc. and also safe routes for disabled people, pregnant, children, etc. Social dimension is the most difficult dimension to reach and find the optimum in urban design as it manages different expectations and demands of people (Carmona, Heath, Oc and Tiesdel, 2003: 124).

The Visual Dimension

The evaluation of space is related to the consciousness and judgment of people. For this reason, the union in harmony with the environment is required to form positive impression in visual dimension. In visual dimension, the criteria for the union in harmony with the environment are; sitting, massing, scale, proportion, rhythm and materials. For increasing the sense of visual attention and space; buildings, streets and spaces should be thought together with landscape and street fittings (Carmona, Heath, Oc and Tiesdel, 2003: 204).

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The Functional Dimension

The evaluation criteria directed at the functional dimension are; comfort, relaxation, passive engagement, active engagement and discovery. Green areas, car parks, area density, entrances, function schema should be evaluated in investigation of functionality. Sustainable architectural structuring is also important in this dimension (Carmona, Heath, Oc and Tiesdel, 2003: 178).

The Temporal Dimension

For temporal dimension, the morphological change of spaces in time, the changes in space usage times, in which time intervals the space is denser and summer-winter usages are important (Carmona, Heath, Oc and Tiesdel, 2003: 193).

FIELD- WORK

Eskişehir as a neighbor to Ankara, Konya, Bursa, Kütahya and Afyon is a city where İstanbul-Konya highway intersects (Figure 2). According to 2016 ABPRS data the population of Eskişehir is 844.842 and it is 25th in Turkey. Eskişehir can be defined as a student city and a city of industry. Eskişehir hosted many different civilizations including Seljuks and Ottoman Empire in historical process. Historical, cultural, natural, economic and social values affected the formation of city identity.

Odunpazarı district, Porsuk Stream, thermal spring facilities, old industrial buildings within the city, new organized industry, railway (transportation) and universities can be ranked among the elements forming city identity of Eskişehir (Figure 3).

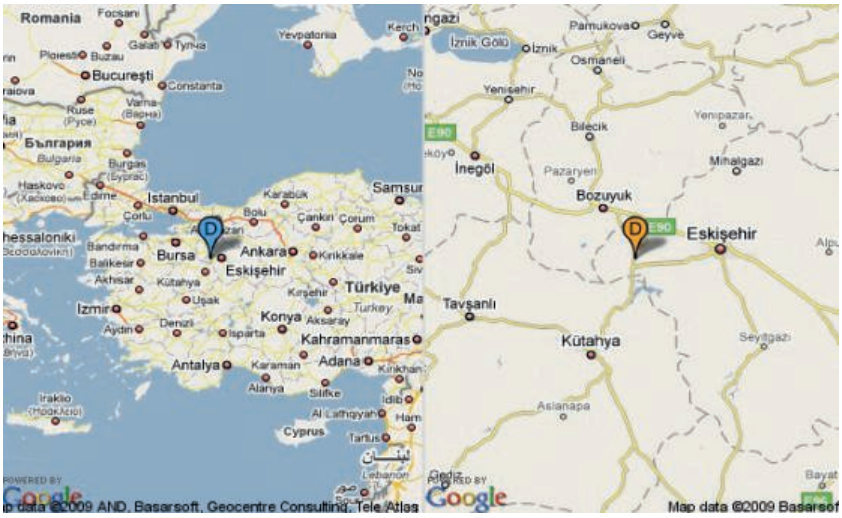

Figure 2. The Location of Eskişehir

*Google Maps, 2018.

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Figure 3. Important Values Constituting Identity of Eskişehir

*Google Maps, 2018.

The first master plan of Eskişehir was studied in 1956. Thereby a period in which the urban developments in city history were realized depending on the plan decisions. The second master plan of the city was made in 1986 and these prepared plans happened to be one of the directive elements of urban development. The period which has the highest speed of urban development was between 1950-70 years with the increase in public investments and establishment of Sümerbank Printed Cotton Factory and material factory connected to Sugar Factory. The development of the city continued as parallel to rapid population growth and new immigrant neighborhoods were settled. The most important reason of scattered structuring of these neighborhoods was originated from disintegrative site location decisions for public and private industry institutions (Madran, Nalbant and Özgönül, 2006: 61).

For Factory Region; 1/5000 scaled master development plans were made in 2002 and 1/1000 scaled implementary development plans were made in 2003. Likewise the 18th article application was realized in those years. The planning of Factory Region was also seen in the first plan made in 1956 (Figure 4).

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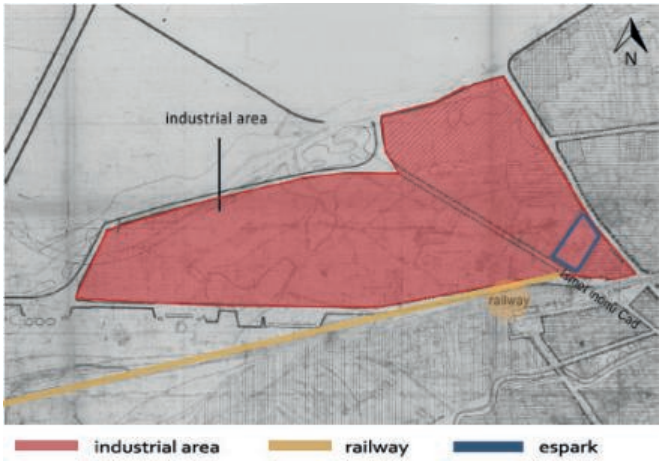

Figure 4. Factory District in 1956's Master Plan

*Municipality Archive, 2018.

The urban regeneration studies in Eskişehir was started in 2005 with the vision of "European city".

ESPARK PROJECT

The buildings and areas of industrial heritage in Eskişehir represents the historical traces of the spatial and cultural effects and architectural identity belonged to the period in which economic production dominated on the values forming the function and structure (Alagöz, 2017: 221).

In 1928, Kurt Glazed Tile Factory was established in Eskişehir and tile production was started. In the following years, many factories were established and the region was started to be mentioned as "Factories Region". However as a result of the population growth and development of the city in time, the factories in factories region of Eskişehir were started to be demolished and replaced by social areas.

Espark shopping center is constructed in the empty area of Kurt Tile Factory. The construction of Espark finished in 2007 and became one of the most popular places. In shopping center the extensions where the traces of the factories are conserved are used as cafes today.

Flues and other units of Kurt Tiles Factory were registered as historical industry entities with various decisions taken by Eskişehir Region Directorate of Culture and Nature Entities Conservation between 1998-2003 years. However, two of these flues were rebuilt and covered with old materials (Baykal, 2010: 58).

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Figure 5. Change of Espark and Its Environment over the Years

*Google Maps.

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Figure 5 shows the development of Espark and its environment according to years. The units where the values belonged to the past were conserved were restored and turned into bars and cafes (Figure 6, 7).

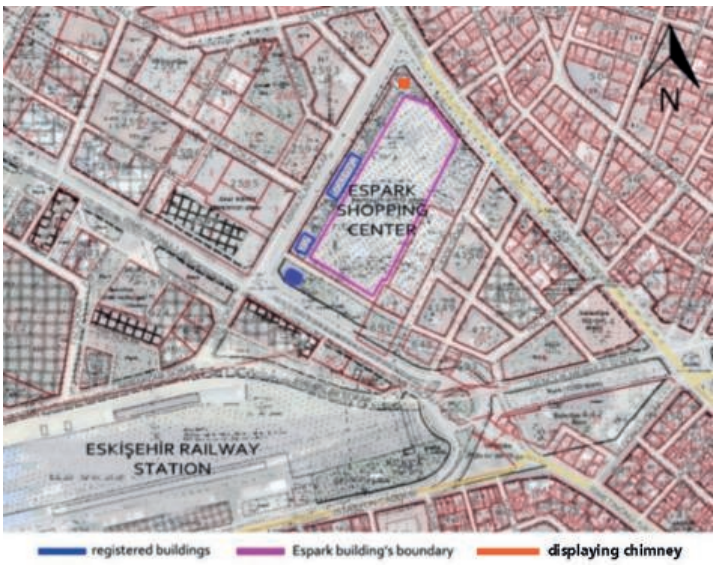

Figure 6. Registered Buildings in Espark's Land

*Municipality web site, 2018.

Figure 7. Current Use of the Registered Buildings

*Authors, 2018.

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FINDINGS

In this study, the review of photograph, satellite image, map and plans, survey and field searches are realized for evaluating the Espark regeneration in the context of urban design dimensions.

The survey prepared in the frame of the knowledge gained from the literature search is done face to face with 100 people and evaluated. The survey is prepared under 5 headlines, 9 basic questions and 55 evaluation criterion appropriate for 5 point likert scale. In the evaluation of frequency distributions the options of "*absolutely disagree* and *disagree*" and "*absolutely agree* and *agree*" are reunited. General results in the form of *agree, neutral* and *disagree* are evaluated.

When the demographic situations of the participants are evaluated; they are 50% woman, 50% man and their education levels are 14% primary education, 48% secondary education, 38% undergraduate and post graduate education. The employment situations of the participants are 30% trade and service sector, 34% retired or unemployed, 36% health, education, law and other professions.

The focus group is determined as the Espark users who know the area before the regeneration studies in the factories region, live in Eskişehir for at least 10 years and are 28 years old and older. In this scope the participants are 24% 28-35 years old, 58% 36-55 years old, 18% older than 56. The participants have lived in Eskişehir for 4% 1-10 years, 69% 11-20 years and 27% more than 21 years (Table 4). These values are important as it shows that they lived for a while to be able to observe the change of Eskişehir identity.

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Table 4. Survey Results About Users Profiles

Gender	Female	Male	
	%50	%50	
Age	28-35	36-55	56+
	%24	%58	%18
Job	Trade-Service	Retired-Jobless	Other
	%30	%34	%36
Educational Status	Primary edu.	Secondary edu.	University-Master
	%14	%48	%38
How Many Years Live Eskişehir?	1-10 years	11-20 years	21 years +
	%4	%69	%27
Where Are You From?	Eskişehir	Adjacent cities	Other
	%60	%16	%24

Morphological Dimension

The indicators of land uses, building structures, plot patterns, street patterns related to the morphological dimension of the project are evaluated with the existing situation, satellite photographs, plan documents, photographs and drawings.

When the satellite images of 1982 and 2017 are reviewed, it is obvious that the area and built area become denser in time in the area where Espark is located. When the building form is surveyed, it is seen that while the old factory had an irregular form, the shopping center has a rectangular form (Figure 9). According to the land pattern, all plots are used, plots are enlarged by combining and building density increased. While 30% of the plot was built before the shopping center, 70% become full with buildings after the shopping center. 70% of the built area is Espark building and 30% is the conserved units of Kurt Tiles Factory (flues and lodges). It is determined that whole factory region is used by shopping center and some buildings and parts belonged to old factories are conserved. When the satellite images belonged to 2002 and 2017 are compared in the change of green area usage, it is interpreted that old green fabric disappeared and concretion increased. In addition to this, a wide boulevard is completed in 2015 as a result of the increase in vehicle, pedestrian and user density occurred in time. Narrow street pattern left its place to wide street pattern (Figure 8). It is determined that the form

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of the building, street pattern, plot and building density morphologically changed.

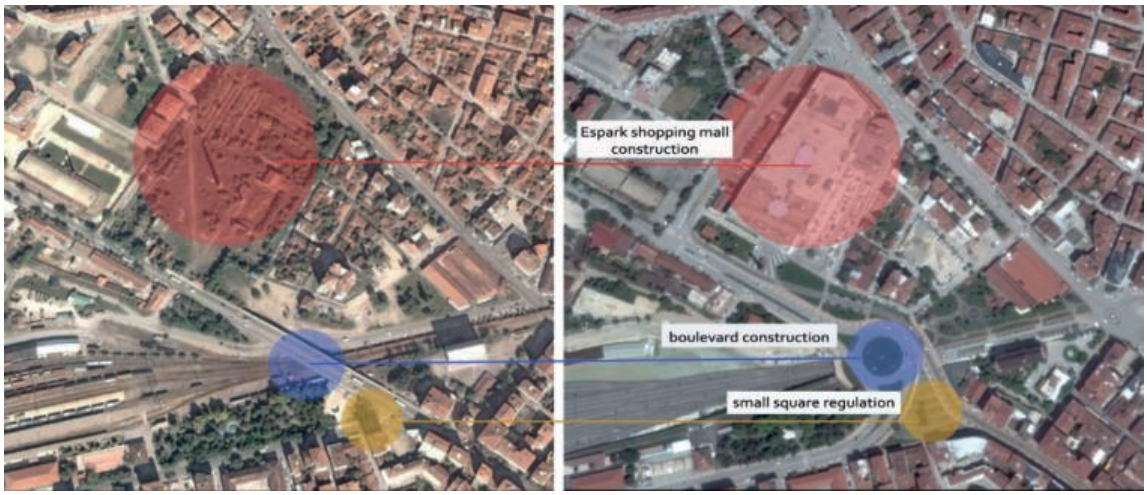

Figure 8. Morphological Changes in the Area, 2002 and 2017

*Detailed by Authors from Google Earth Map.

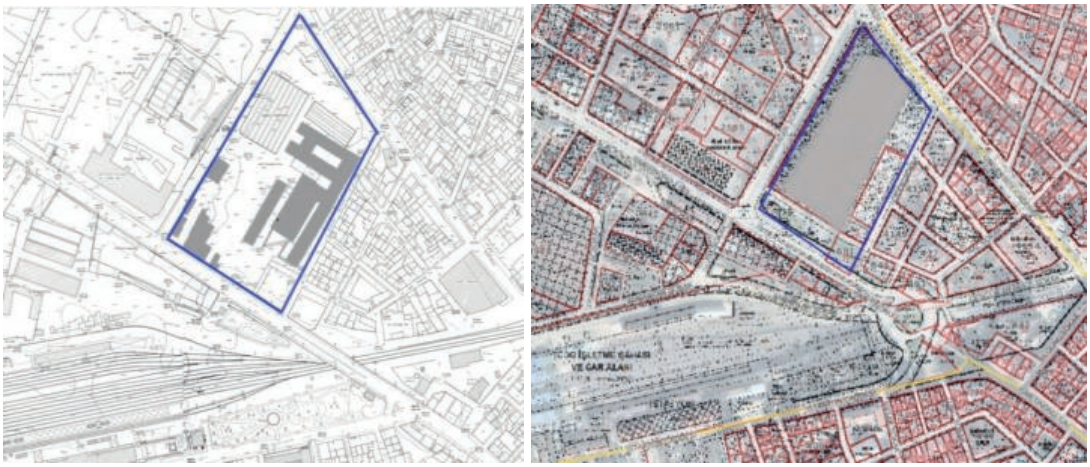

Figure 9. Land Using in 1982 and 2017

*Municipality, 2018.

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Perceptual Dimension

Survey results are used in the evaluation of the indicators of identity, meaning and structure related to perceptual dimension of the project.

About the questions asked related to identity, participants answered the idea of the factory transform into something else than a shopping center as 34% agree, 51% disagree and 15% neutral. These evaluations are important as they show that the citizens adopted the shopping center regeneration. The participants answered the idea of the factory to be conserved as it was while transforming into a shopping center as 21% want to, 55% not want to and 24% neutral. These answers show that there is a satisfaction for the new building constructed instead of the old factory. The proportion of the ones who feel discomfort for the demolition of the factory while transforming into a shopping center is 32%, and the ones who does not feel discomfort is 68%. As the survey is made with the people who have lived in Eskişehir for more than 10 years, the majority knows that the region was a factory in the past.

When the criteria of Carmona, Heath, Oc and Tiesdel in 2003 are considered, it can be said that the perception of the city changed with Espark and it played a role in the change of city identity (Figure 10). Survey evaluations also revealed that the flues in front of Espark is recognized in urban perception and the remains-units belonged to factory region are adopted by the citizens.

Figure 10. Espark's Influence on Street Sense
*Çayır, 2011: 112

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For meaning indicator, 82% of the participants know that this area was a factory in the past. This area is adopted by Eskişehir citizens as factories region. 73% of participants indicated that the idle factory area was a wreckage before the regeneration and become a place where is not visited in time.

In the evaluation of structure; 75% of the participants indicated that the project affected urban development, 78% said the area is more actively used after the regeneration, 88% said the area become more definable with the project, 76% said it revive trade, 93% said pedestrian circulation increased, 45% said cultural activities increased, 55% said social relationships changed in a good way. Also 83% of the participants said that the noise increased (Table 5).

Table 5. Survey Results about Perceptual Dimension

	1	2	3	Mean	Standart Deviation
The Field Becomes Active	%6	%16	%78	2,7200	,56995
The Field Becomes Recognizable	%2	%10	%88	2,8600	,40252
It Revived Trading	%10	%14	%76	2,6600	,65474
It Affected the Development of the City	%12	%20	%68	2,5600	,70094
Cultural Activities Increased	%19	%36	%45	2,2600	,76038
Social Relationships Changed	%8	%37	%55	2,4700	,64283
Vehicle Circulation Increased	%1	%10	%89	2,8800	,35619
Pedestrian Circulation Increased	%0	%7	%93	2,9300	,25643
Noise Increased	%8	%9	%83	2,7500	,59246

*agree ‘3’, undecided ‘2’, I do not agree ‘1’.

In functional meaning, it is observed that Espark formed positive effects on change of identity, bringing new usages and providing social, cultural and economic aliveness.

Social Dimension

For the social dimension effect of the project, the questions were directed at the evaluation of relationship between people and space, public life, the notion of neighborhoods, accessibility, safety and security.

The aim of participants’ usage of shopping center are; 49% for shopping, 25% for going to the cinema. The options of “for entertainment, for children, for spending spare time” are preferred less. 41% of participants indicated that they came to the shopping center on foot. The proportion of the ones who come with vehicles is 27%, motorcycle and bicycle is 3%, public

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transportation is 29%. As the shopping center is not disconnected from the city and it is in a central location, it is an important factor for that the option of on foot in the reaching ways to shopping center has the highest ratio. When the accessibility to shopping center is evaluated 52% of the participants indicated that the safe routes for elders, children and disabled people are insufficient. 37% of the participants said that the safety in the shopping center and its environment is insufficient. However 62% of the participants indicated that social and cultural activities increased (Table 6). The survey evaluation related to social dimension revealed that, in human and space relations the usage of the area and social and cultural activity possibilities increased, sense of safety increased compared to the time before regeneration but it is not still in the intended level and there are access inadequacies of the disadvantageous groups such as disabled people, children and elder.

Table 6. Survey Results about Social Dimension

Why Are You Coming	Shopping	Eating	Fun	Spend Leisure Time	Kids	Cinema
	%49	%14	%6	%8	%8	%15
How Are You Coming	on Foot	Tram	Bus	Bicycle-Motorcycle	Vehicle	
	%41	%30	%21	%4	%4	

	1	2	3	Mean	Standart Deviation
Sufficiency of Safe Routes for the Elderly and Children	%48	%27	%25	1,7700	,82701
Sufficiency of Safe Routes for Disability	%50	%32	%18	1,6800	,76383
Sufficiency of Safety of Shopping Center	%37	%32	%31	1,9400	,82658
Sufficiency of Social-Cultural Activities	%29	%39	%32	2,0300	,78438

*agree ‘3’, undecided ‘2’, I do not agree ‘1’

Visual Dimension

In the evaluations related to visual dimension (sitting, massing, scale, proportion, rhythm and materials) are assessed with the help of survey, field study and photographs.

In the survey about visual dimension the participants are asked to evaluate the questions such as size, elevation, materials used, sufficiency of open spaces and adequacy of open car parks.

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70% of the participants indicated that open outer spaces of Espark is insufficient, 63% said open car park inadequate. 28% found the size of Espark very good while the ratio about the height is 32%. The ones evaluated the material usage as very good are 40% (Table 7). These evaluations show that, the expected perception is not formed in visual dimension. It is determined that the participants think that visually the project has deficiencies about scale, proportion, rhythm and materials.

When sitting is evaluated Espark has two entrance doors, one located in north the other is in south direction (Figure 11). 43% of the participants uses Üniversiteler Street Door, 57% prefers İsmet İnönü Street Door. The most important reason of this preference is that it is the entrance directed at the stop point of public transportation.

Table 7. Survey Results About Visual Dimension

	1	2	3	Mean	Standart Deviation
Size of Espark	%23	%49	%28	2,0500	,71598
Height of Espark	%15	%53	%32	2,1700	,66750
Sufficiency of the Open Spaces of Espark	%70	%16	%14	1,4400	,72919
Sufficiency of Open Car Park Spaces of Espark	%63	%28	%9	1,4600	,65782
Architecture and Materials Used in Espark	%19	%41	%40	2,2100	,74257

*very good ‘3’, undecided ‘2’, bad ‘1’

Figure 11. Espark’s Entrances
*Authors, 2018.

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The photographs of Espark's interior spaces are in Figure 12. The determinations gained from these visuals and field study show that interior space is compatible, wide and covered with shiny surfaces but has sections those form a height perception over human scale (approximately 18 meters) and includes dense usage areas. Related to visual dimension, it is possible to say that interior space of the shopping center has a better perception level in proportion to outer space.

Figure 12. Espark Inside

*Authors, 2018.

Functional Dimension

The indicators related to the functional dimension of the project such as comfort, relaxation, passive engagement, active engagement and discovery are evaluated with field study, city plans and photographs.

The area passed through a collapse period after being used as a factory for long years, so it could rapidly pass through the process of transforming into shopping center. The situation of that the plots belonged to the factory and there is no other function or ownership, eased the process. Shopping center is built as a single mass while it was a scattered mass

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in the time it was used as a factory. The user density of the shopping center with the developing social structure increased the need for the social and recreational areas around the site. Figure 13 shows Espark and its close environment. Open car park is located in the east. The buildings and functions in the environment are synchronized. The other buildings belonged to factories in the area are transformed into functions like dwelling, hotel, bar and cafe. Aliveness, novelty and variety in functional meaning was formed.

Figure 13. Espark's Functional Analyze

*Detailed by Authors from Google Earth Map

Temporal Dimension

Period uses and time range uses of Espark are evaluated with the survey study for temporal dimension. When the survey results are reviewed for temporal dimension, it is determined that the peak usage time of the shopping center in summer and winter months is the weekends. 64% of the participants comes 1-2 times a week, 4% comes 1-2 times a month and 32% comes several times a year. 6% of the participants indicated that they come to Espark on week days, 60% comes on wee-

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kends, 34% comes both on weekdays and weekends (Table 8). In temporal dimension it is determined that the peak usage time of the shopping center is on weekends and in winter. The shopping center is open between 10:00-22:00, the bar and cafes in the environment stays open till late at night. It is determined that the shopping center and its environment is used approximately 16 hours a day. This proportion is important as it shows that alive and usable space character developed with temporal change.

Table 8. Survey Results about Temporal Dimension

Time Range	10:00-12:00	12:00-13:00	13:00-17:00	17:00-22:00
	%11	%4	%44	%41
When are you coming	Weekdays	Weekend	Both of them	
	%26	%68	%6	
Summer	Every day	1-2 times a week	1-2 times a month	
	%7	%33	%60	
Winter	Every day	1-2 times a week	1-2 times a month	
	%5	%28	%67	

The findings gained about urban design dimensions directed the discussion.

DISCUSSION

Urban design seems to have widespread popularity, as evident by its increasing presence in professional journals, government websites, academic debates and popular media (Madanipour, 2006: 173). Urban design has a multi-dimensional and multi-layered nature. Our experiences in urban environments can be holistic in this multi-dimensional structure, however for better understanding, it is necessary to review and analyze in the frame of urban design dimensions. These component parts must be drawn together and thought as a whole to create new places and make positive contributions and interventions to existing places (Carmona, Heath, Oc and Tiesdel, 2003: 283).

The conservation of Kurt Tile Factory's flues and some units should be evaluated as a positive step about transferring the traces of the past to the future in Espark regeneration project. However, the changeover in morphological structure of the area and its dense and concrete appearance formed negation. One of the factory's flues was conserved while the other one was demolished and rebuilt in another area. These flues and the usage of outer spaces belonged to the old factory played role

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for the shopping center to gain a place in citizens' memory.

With Espark project, it is determined that there are morphological, functional, visual, social, perceptual and temporal changes.

According to the morphological dimension; area usage and built environment became denser, building structures and forms changed, plot pattern is conserved, pedestrian density increased and road pattern enlarged depending on the traffic problems. Morphologically, it transformed into a brand-new form which did not belong to the past.

As the first regeneration study realized in factories region of Eskişehir, Espark formed huge and positive effects on perceptual dimension of the city and became a reference for the other regeneration studies in the area. The answers of the survey participants show that they feel appreciation for the disappereance of the dangerous and insecure state of the brownfield factory area near to the city center.

Old factory was demolished and a shopping center was built instead. The small commercial units around the shopping center are parts of that factory. In the project while one of the flues was conserved in-situ as it is, the other flue was demolished and rebuilt in a place close to its previous location. This situation is evaluated as a important determination as it shows that the cultural heritage was not completely destroyed and there is the existence of the idea to conserve its place in citizens' memory. Thus, the traces of the past were enabled to be transferred to the future. While the shopping center became one of the new important element of city identity, the traces of the past continued to be perceived.

As the participants of the survey indicated; although it became a route which people rarely pass through because of the bad appearance and smell after the demolition of the factory, today it is located in the busiest point of the city and it changed the social dimension a lot. Accessibility increased but also noise problems increased. It played an important role for increasing social interaction as it provided the increase of public areas.

In visual dimension, the settlement of the factory and the shopping center in the area changed the image of the city. However open areas, open car park and routes for elders, children and disabled people were evaluated as insufficient. These inadequacies draw attention to the importance of built environment in harmony with its surrounding, scale-proportion relationship and material usage while they also revealed the necessity of providing the spaces in harmony with the urban characteristics and citizens' expectations.

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From the point of functional dimension, Espark regeneration project, indicated as the first biggest shopping center of Eskişehir, is evaluated positively because it made the area active. Today mixed use areas sheltering many functions different from each other together form positive urban settlement patterns in the sense of safety with the increase in usage time and density and accessibility with the opportunities it provided for fulfilling many needs in walk distance. In this scope, locating many functions compared with the time before the transformation together supported the formation of mixed use areas.

Lastly when the temporal dimension is evaluated; the increase in the number of the daily users and daily usage time (hour) gives important clues to be used in evaluating the temporal change in the use of space. While the factory area was a brownfield continuing its rural character before the Espark project built in 2007, now it became an alive space used densely through day and night.

When changes in the urban built environment provide quantitative accumulation, they can lead to a qualitative regeneration (Ünlü, 2006: 65). As a result of the demolition and reconstruction of old industrial structures, it is necessary to prevent the loss of the original qualities of the building / building group that are worth preserving, even if there are sufficient information and documents, that old industrial buildings should not be allowed to be rebuilt (Çayır, 2011: 113).

RESULTS

The analysis of Espark in terms of urban design dimensions which were presented by Carmona, Heath, Oc and Tiesdell reveals versatile findings.

When these changes integrally assessed, it can be said that Espark shopping center regeneration project positively affected the urban space formation. Although Espark shopping center is integrated with the city by both forming a new identity element and making the applications directed at perceiving the past possible, it evokes the lack of producing space with more detailed points of view in visual and morphological meaning. It is determined that the revival is provided in the area where both the collapse problems and the environmental pollution disappeared with the construction of shopping center.

The shopping center transformed from a tile factory, changed its environment in time and caused dense usage. As a result of the observation, it is determined that the traffic density of the roads around Espark is very high. Espark's design is highly effective on this density. Moreover, the safety problems in closed and open car parks can be related to the design. The dense usage loaded to the area must be properly managed, the reasons

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of insecurity must be determined and solutions must be developed.

In urban space, the design of horizontal and vertical components of space (facade width, building height, facades, landscape, building materials, architectural style, open-closed areas, functions, transportation, etc) reveals the originality of that space. At this point, it is important to consider and evaluate especially these criteria related to visual dimension. The regeneration of Espark is assessed as positive for its perceptual, functional, temporal and social dimensions.

The positive and negative sides of the project could be determined with a project evaluated in the frame of urban design dimensions. All of these results support the verification of the hypotheses in the study.

As a result, in the process of brownfield regeneration references belonged to the values in the quality of cultural heritage should be left for transferring the traces of the past to the future. New space formation process should be based on integrative evaluations in the frame of urban design dimensions. Thus, qualified spaces which can be integrated with the city can be produced.

About the relationships between all dimensions of urban design and regeneration projects; it can be said that it will be flourished with the researches in the direction of managing the effects on new space usages and producing application models.

SUGGESTIONS

It is very important to predict the urban development during renewal of city centers and make the urban designs accordingly. In Eskişehir, the factories in the factory region - where changed and transformed in time - shifted the focus of the city by transforming into more social areas (hotels, shopping centers, gated communities and cafes). It is suggested in these areas to design recreational areas, increase open areas and develop safety measures.

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