

# The Spatial Alteration of Istanbul Celiktepe District

**Cagda Ozbaki**

Bahcesehir University, Department of Architecture, Istanbul, Turkey  
cagda.ozbaki@bahcesehir.edu.tr

**Deniz Erinsel Onder**

YTU, Department of Architecture, Istanbul, Turkey  
erinselonder@gmail.com

**Abstract**

*The role and the situation of urbans have changed in the global macro-form and national-state in the 20th century in which the processes of globalization are felt densely. Instead of urban definitions that exist in a certain national-state and belong to this national state, they now define an urban that competes with the other urbans on the globe and that is in an interaction with this process. The phenomenon is studied in the concept of "syntactic organization of urban space" and "urban configuration". Changes have been observed in the changing processes of production-consumption relations of the urban space.*

*This study was held for the exposal of the interaction between the spatial configuration and land use properties of Celiktepe district in the urban growth and alteration process from 1985 to today. The Space Syntax model was utilized for the morphological structuring analysis of the urban systems of different eras. As a result, the inferences from the morphological analysis help us not only to depict physical formation of the area but also to comprehend the social differences after the functional change of the environment.*

**1. Introduction**

Today cities get their share of the effects caused by globalization. If the city of the twentieth century is defined as modernist and/or postmodernist, twenty first century is inevitably the 'century of the global city'. Cities of today, having international architectural and design practice and also turning into 'global urban space', have been forced to re-configure themselves in order to accommodate the elements(company investors, international companies, finance institutions, etc.) created by this concept of 'global urban space' and so started to sprawl. Business centers, shopping centers and living centers emerged from the changes in production- consumption; technology, finance and society are the reactions of the metropol to the globalization.

However, differing city pieces (sub-city centers) because of the fast-growing and dispersing cities have brought about several problems. Especially business centers being used intensively at a certain time of the day and not being used except working hours and working days have brought about unstable and sudden congestion in that environment and thus caused problems in user's satisfaction, traffic and security.

Areas that plazas, business or shopping centers are situated at are close to the city centers in some cases. In other cases, even if these areas are not so close to the places defined as city center, they turn into areas in which there is an intensive concentration of shopping centers and plazas due to the fact that that particular area of the city acquire such a character of its own in time. In both cases, these areas that these centers are located in are gaining value both economically and socially. However, in order to minimize the problems caused by the centers

aiming at only one purpose and to make better use of these areas located in valuable districts, centers that offer business, shopping, entertainment/recreation and housing functions at the same time started to emerge.

These buildings of combined use can be bigger in density and size than a business center. Because of their congestion, functions and size, making an architectural evaluation of these centers is not sufficient. Thus, besides their spatial features, it is necessary to evaluate these buildings with respect to their close environment and their relationship with the city. In Turkey, Istanbul is the city which hosts the biggest and the most intensive global stock activities of the country. Due to its geographical location in the intersection of the land routes and sea routes, Istanbul has been the focus of trading activities both in Turkey and the world for years.

The commercial activities in Eminönü, Fatih and Beyoglu located on the Historic Peninsula of Istanbul, which has been hosting the trading activities for years, moved towards Sisli, Mecidiyeköy and Besiktas as a result of the fast development in 1960s (Dökmeci et al, 1993). Factors like narrow streets in the historical places, insufficiency of public transportation and the structure's incapability of handling the city traffic have been influential on the emergence of new business areas in different locations.

In conclusion, the increase in the population of the city, the growth of the city and lack of adequate development in the transportation system at the same rate make the access to the city center difficult. After the ringroads were built, more convenient spaces emerged for new offices and centers and an extension started from the center towards the outer parts (Dökmeci et al, 1993). This circumstance had an influence on the plazas and centers including office functions to emerge between Zincirlikuyu-Maslak. Shopping centers have started to appear intensively in this region beginning from 1990s. In this respect, changing production-consumption relationships in Istanbul, Çeliktepe caused a more different change than in the other parts of the city.

**The Aim of the Study:** Çeliktepe-Gültepe is an area in which important industrial buildings of Istanbul are located until 1985. With the decisions made in 1990, its status of industrial function was changed into tourism function (Kabarik, 1991). It is possible to say that a change started with the building of Metrocity in the area (1990). This study discusses the change in close environment caused by the structuring emerged in Çeliktepe, Istanbul. The study is composed of three main parts. In the first part, necessary explanations about the method of the study were made and theoretical background information was given. In the second part, information about Çeliktepe, Istanbul was presented. Lastly, study area was analysed in the light of information and theories and results of the study were interpreted. This study seeks for answers for three questions: How and why did this urban change in Çeliktepe area happen? What are the differences in urban space organizations before this change and today? What are the effects of these changes on the area? Besides literature review and techniques of collecting information such as observation and interview, space syntax method was used for analysis of physical condition in order to find answers to these questions.

## **2. Method: Space Syntax**

For the success of pieces to be jointed or the points to be changed, it is certainly useful to analyse the complex structure that emerges as a result of present overlapping and to construct the connection with the human being.

It is possible to find various methods and approaches created for reading and analyzing the space in the architecture literature. Mentioning the importance of legibility of the city, Lynch defines urban elements that are effective in legibility as borders, landing marks, intersection points, routes and districts (Lynch, 1960). Norberg-Schulz, taking up Lynch as reference, states that the city has three basic elements, namely square-center, roads and districts. He analyzes the structure-morphology with pattern, road, permanency and closeness (Norberg-Schulz, 1971). One of the important theories in recent years that is also used as a method in this study related to analyzing morphological of the city, is Hillier and Hanson's (Hillier and Hanson, 1984).

Hillier states that the city is composed of economic processes, social relations, psychological expressions and cultural environments rather than of solely formed physical environments. The city can be analyzed in different ways with the help of these factors. These features make up the foundations of different physical structures seen in different environments and cities, which form them and give them a meaning. In order to understand the city, one should understand the rules of the physical form that creates it. According to Hillier, there are three types of rules used to analyze the urban object (Hillier, 1989).

1. The rules of the urban object itself: These are the rules that indicate the way the buildings are brought together to form the settlements or urban spaces. These are not the physical forms but the rules underlying the formation of it.
2. These are the rules that explain how the spaces are formed in accordance with different social lives, how the society uses the urban object and how the society adapts to it. For instance, they provide information about the identification of spaces that underwent a change (integrated and segregated more) within the urban structure and lives of people.
3. The rules stemming from spatial form and affecting the society: There are describable effects of spatial forms on people. Spatial forms create possible meeting areas in which we live and move. This area is an important sociological and psychological source. Hillier names this structure as 'virtual community' and states that virtual community is a product of 'spatial configuration' and that it is possible to display the presence of this configuration by means of space syntax analyses.

The systematic observation of the space, which is the base for syntactic analyses, indicates reliable statistical ratios regarding who uses the space and who moves within that space. Hillier points out that it is the 'spatial culture' what causes differences in geometrical organization and syntactic differences of urban spaces (Hillier, 2001). For instance, a grid system was established in American cities in order to provide an easy and fast sharing of the area. In European cities, on the other hand, the space system has a more open organization. In short, both economic input and movement patterns affect the configuration of spatial culture. In this case, spatial culture creates differences in the geometry of the axial maps.

Evaluating these differences mathematically, that is, with the help of integration values of the urban spaces, the areas that create the center of the district (integration core) can be detected. Hillier argues that the center has its own dynamics and the center does not move as a result of economic and planning decisions or spatial reasons. Hillier continues with the concept of 'live centrality', which indicates that functions like bazaar, shopping, entertainment, are formed with the movements of pedestrians. In the article called 'Centrality as a process', he mentions that well-defined spatial factors play a serious role on the formation and settlement of spatial factors and that they are equally important for providing and maintaining their liveliness (Hillier, 1999). Moreover, it is possible to achieve information related to comprehensibility and predictability of the settlements based on the relations between local and global measurements obtained from syntactic analyses.

Within this study, we tried to clarify the issues of identification of 'spatial culture' that changes and takes shape with new decisions, the place of integration core and intelligibility of urban part. For this purpose, an analysis of Çeliktepe-GÜltepe area for the years 1985 and 2005 was carried out. Before the findings achieved as a result of the analysis, it will be helpful to mention the study area, frame and problems.

### **3. Study Area: Istanbul-Çeliktepe**

#### **Boundaries of Study Area**

In chronological order, Kagithane district is located at the left side of Büyükdere Road which connects Çeliktepe-Sisli-Mecidiyeköy-Levent axis and Eminönü-Taksim-Besiktas-Levent axis with Sariyer, just opposite 4.Levent, a district belonging to Besiktas. Study area is the axis that starts

from Zincirlikuyu Graveyard and continues towards Metrocity, Tekfen Tower, Kanyon and continues. This axis is surrounded by Büyükdere Road in the east, Zincirlikuyu Graveyard in the north, Ortabayir, Çeliktepe and Emniyetevleri neighbourhoods in the west (See Figure 1). Büyükdere Road is the way starting from Sisli Mosque and going past Mecidiyeköy, Esentepe, Zincirlikuyu, Levent Sanayi neighbourhood and arriving at Maslak intersection and Hacı Osman Slope (Toy, 1999, p.57). Around Büyükdere Road, which is being extended and improved continuously, new residential areas have been established in time. Levent was established in 1950, and then came the second, third and fourth Levent. Starting as slum districts in 1960s, Telsizler, Ortabayir, Sanayi neighbourhood turned into big neighbourhoods and they added new urban functions in time. Especially beginning from 1950s, different industrial firms established their production plants in this area such as Eczacıbaşı (1952), Squib (1953), Philips (1956), Deva (1974). In the coming years, facilities of Renault, Sesa, Atatürk Auto Industrial Area were built.



**Figure 1**

*The position of the study area in Istanbul.*

This area, settled in an irregular and illegal way previously, turned into one of the important centers of Istanbul in the course of time due to the intensive change and growth of the city. Residents of these areas are usually people who have a low income, have no regular job and have recently immigrated to the city. Even though illegal slum housing is caused by settling in someone else's area without permission, the first slum housing in this area was started with the permission of local administration (municipality) and is an exception (Koç, 1998, p.84-85).

### **History of the Study Area**

Unlike several sub-centers in Istanbul, this study area has neither historical nor cultural structure that we can trace today. The area was used as an entertainment center in the Ottoman period and as a military space for some military units in the first years of the Republic. It is possible to indicate the stages that the area went through as follows: (Koç, 1998, p.84-85).

1<sup>st</sup> Period: Improvement of Levent (1950-1953): In this period, the area belonged to Kagithane village. The first mass housing in Levent area between 1950-1953 happened at the same time with the founding of medicine factories at the left side of Büyükdere Road (at the outskirts of Çeliklepe-Gültepe, opposite Levent).

2<sup>nd</sup> Period: Estate Rentals (1953-1957) The estates in Çeliklepe area were rented for agriculture and stockbreeding under contract and in the coming years, they were handed over to others for different purposes.

3<sup>th</sup> Period: Boulevard and Expropriation Operations (1957-1960) The period starting with the renting process in 1950 continued with the expropriation operations for constructing ways for the boulevard in 1957. Thus, present buildings in this period were demolished. Areas used for agriculture were sold instead of renting. As a result of this, a period of construction which was half legal and half illegal was started. Especially in Gültepe, a neighbour of Çeliklepe, illegal and unlicensed construction of buildings increased rapidly. This construction area starting in 1957 became the first settlement center which had no electricity, water, infrastructure and motorway until 1963.

4<sup>th</sup> Period: Planning Phase (1960-1985) After the first plannings with a scale of 1/5000 in 1960, plannings with a scale of 1/1000 were made in 1965. When the implementation plan could not give a result, the present plans were made in 1972. These plans came into operation in depth in 1975. Being legalized thanks to the law made in 1966, the case continued with the pardoning laws of 1975-1985 and the transformation continued with the rehabilitative reconstruction plan made in 1985.

5<sup>th</sup> Period: Transformation Process (1985 and after) From 1985 up to present, it is possible to see three phases of the change in the area: First phase is the illegal construction at the outskirts of Kagithane Stream of Çeliklepe. Second phase is the jointly-owned building blocks which were densely and regularly built in the center of the area. And third phase is the buildings which range with Büyükdere Road (Altinok, 2003).

**Problems of Study Area** We can place the problems in the study area into two groups, namely social and physical. Social Problems:

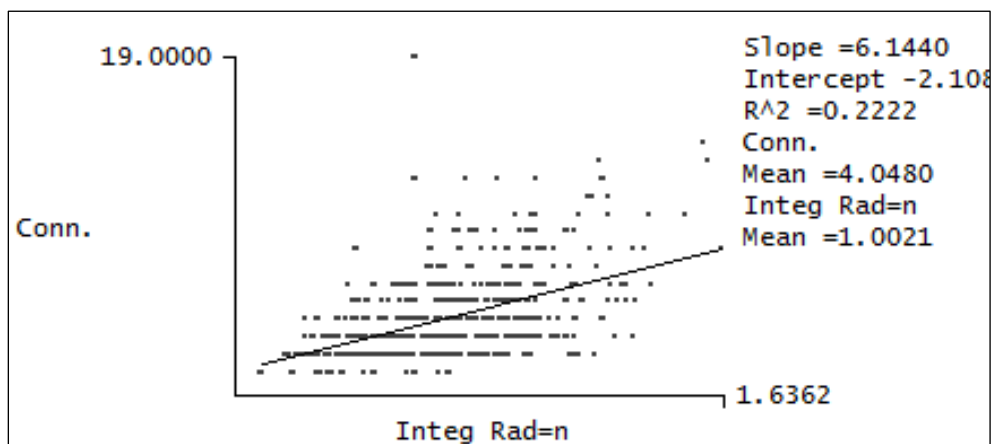
- Most of the residents' having low income,
- Residents' low education level (secondary school),
- Densely populated by people coming from outside the city (rapid migration since 1994),
- Sharp economical and cultural differences between users of Metrocity-Kanyon and present residents in the area.

Physical Problems

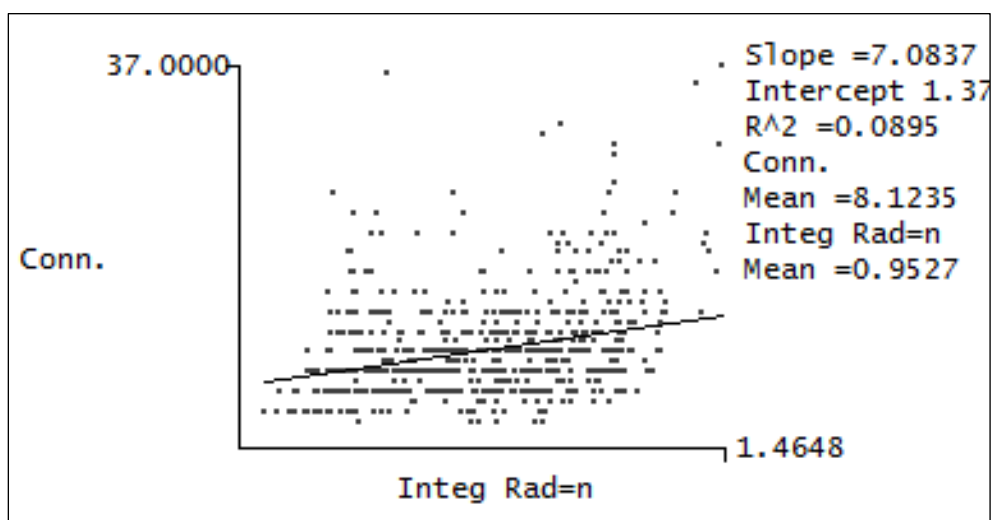
- Insufficient open-closed parking spaces,
- Excessive number of unplanned building blocks,
- Several dead end streets,
- No public centers or social spaces,
- Two shopping centers running parallel to Büyükdere Road, being very close to each other.

Besides these problems, another problematic point is that although the axis in which there are business centers, shopping centers and houses stands back to back with Çeliklepe area which is close to this axis, they are disconnected. Especially with the start of large-scale construction works, it can be said that a physical and social change inside the axis has begun. The constructions of similar function and size are predicted to rise in number within the urban axis that Metrocity, Kanyon and Tekfen Tower are situated at. Because of this potential feature of the area, it is predicted that physical and cultural tension may arise at present and in the future.

#### 4. Results of Analysis of Urban Structure of Istanbul- Çeliktepe



**Figure 2**  
connectivity-integration graphic of 1985.



**Figure 3**  
Connectivity-integration graphic of 2005.

As a result of the axial analysis made according to 1985-2005, the findings below were achieved: The most explicit result is that the core centers of the area change places (for value comparisons see Figure 2 and Figure 3) as Hillier mention before (Hillier 1999). Starting from Zincirlikuyu and continuing in parallel with Büyükdere Road, the axis has centers such as Metrocity and Kanyon and the core started to switch and extended towards this direction. It can also be said that the axial lines in the map of 2005 (Figure 5) lengthened more than the lines in the map of 1985 (See Figure 4) and that this decreased the average integration value of 2005 (See Figure 3). If we compare the correlation integration graphics of 1985 and 2005, it is clear to see from the inclination of the graphics that while the inclination in 1985 was 6.14 (Figure 2), this value rose up to 7.08 in 2005 (Figure 3). This information gives us the result that the urban system emerged in 2005 is more complex than it was in 1985, thus less intelligible. At the same time, the average integration value of 2005 is lower than the value in 1985. However, average integration values of both years are very close to 1. Therefore, since the values really below 1 are accepted as integrated it is possible to say that urban structures of both years are composed of more separated spaces.



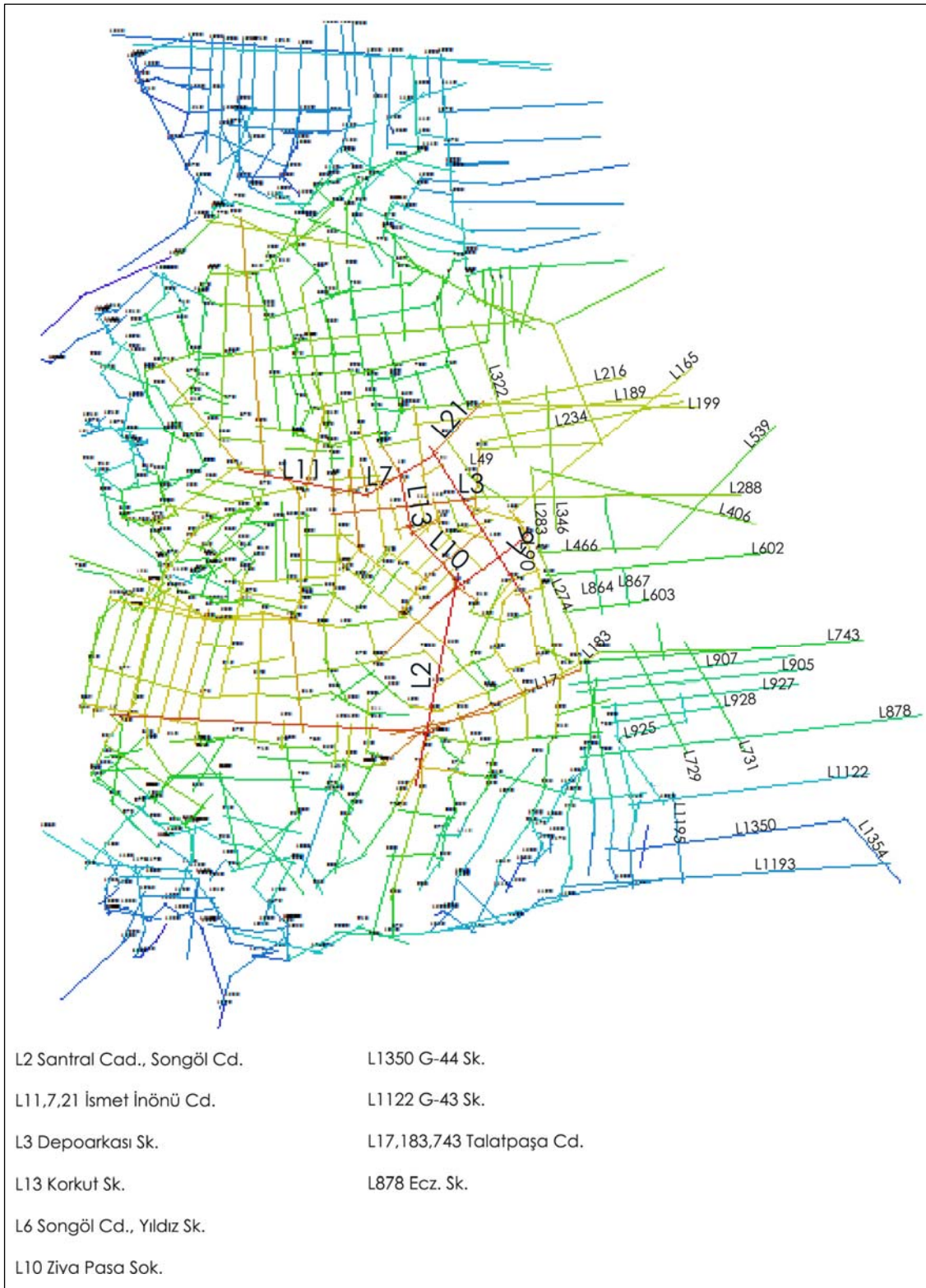


**Figure4**

*Axial map of Çeliktepe in 1985.*

## 5. Evaluation and Conclusion

In the globalization era in which forms of production and consumption habits are continuously changing and improving, cities have to be restructured so that they could keep up with these developments physically and economically in the future. Therefore, with the cities dispersing and growing day by day, certain sub-centers emerged. Especially present urban sub-center changing both functionally and culturally in time due to the growth of the city brings about some problems. In this study, we discussed whether large scale buildings with respect to function and density (e.g. Metrocity, Kanyon Centers) create a change in the spatial pattern near them or not. Spatial patterns of different periods exhibiting the studied Çeliktepe-Istanbul's urban structure were



**Figure 5**

*Axial map of Çeliktepe in 2005.*

analysed with the help of space-syntax method. In this way, similarity and difference between the spatial models belonging to different times were presented. As a result of this analysis, it is possible to make these evaluations:

1. Until 1985, Çeliktepe district was a production area including industrial buildings. After this year, it was decided that the area would be a tourism area and therefore, there emerged a sudden change of function in the area. Especially along the axis starting from Zincirlikuyu,



- large scale buildings appeared. These buildings caused changes in the urban organization of the area.
2. The 'integration maps' of the area in the years 1985 and 2005 bring about differences: While the center of the area in the map of 1985 is in the inner parts of Büyükdere Road, the center axis in the map of 2005 shifts towards the edges of the area.
  3. After analyzing the maps of 1985 and 2005 of the area, it is possible to say that there is a difference in the urban scale because of the changes of functions of the area. As seen in the space-syntax maps, the axis starting from Zincirlikuyu and running parallel to Büyükdere Road is being used by the environment but very low numbers are obtained compared to integration values that constitute the core of the area. That shows us that these centers are not integrated to their present area physically.
  4. The information that the values of integration and comprehensibility are low indicates that this area of the city has a complicated structure. It is possible to say that this situation causes difficulty for the people to perceive this specific area of the city and for the area to be spatially organized.
  5. The urban axis starting with Metrocity is truly different from the present residential pattern both socially and culturally. As a result, it is possible to say that there is a tension between these two areas and that this tension started an unplanned 'gentrification' in the area.
  6. The metro line that came to the area because of large scale constructions of shopping centers and houses played an important role in this change of urban organization.

The results achieved from the analyses indicate that new constructions could not supply integration physically, socially and culturally. To consider the buildings like Metrocity, Kanyon as individual is not sufficient because rather than individual buildings, they need to be taken as urban artefacts due to their inherent functions and the values they represent. At this point, it can be said that to make a careful analysis of the functions, scales and the culture these kinds of buildings represented and to include these kinds of changes into the plans carefully will prevent possible urban problems that can arise in the future. As in the case of this study area, the fact that there is a big difference between socio-economical and cultural levels in such environments where the buildings are closely constructed can cause problems. As in the example of Çeliktepe, an unplanned change came into the picture. It is not wrong to say that this change is an 'unplanned gentrification' although this doesn't match with the general definition of 'gentrification'.

## References

- Altınok, E. (2003) "Bir Kimlikler Bileşkesi: Çeliktepe".  
([http://www.ayrinti.net/index.php?option=com\\_content&task=view&id=706&Itemid=56](http://www.ayrinti.net/index.php?option=com_content&task=view&id=706&Itemid=56), Aralık 2006).
- Bourne, L. S. (1982) "Internal Structure of the City", Oxford University Press, Oxford.
- Dökmeci V., Dülgeroğlu Y., Akkal B. L. (1993) "İstanbul Şehir Merkezi Transformasyonu ve Büro Binaları", Literatür Yayınları, İstanbul.
- Dursun, P. (2002) "Trabzon Kentsel Dokusunda Morfolojik Analiz", PhD Thesis, İstanbul Technical University.
- Erdönmez, E. (2005) "Açık Kamusal Kent Mekanlarının Toplumsal İlişkileri Yapılandırmadaki Rolü, Büyükdere-Levent-Maslak Aksı", PhD Dissertation, Yıldız Technical University.
- Hillier, B. and Hanson J. (1984) "The Social Logic of Space", Cambridge, Cambridge University Press.
- Hillier B., Hanson J. and Peponis J. (1987) "Syntactic Analysis of Settlements", Architectural Behaviour, Vol. 3, N.3, p.222-231.
- Hanson J. (1989) "Order and structure in urban space; A morfological history of the city of London", PhD Dissertation, Bartlett School Of Architecture and Planning, University College Of London, London.
- Hillier, B. (1989) "The Architecture of Urban Object", Ekistics, 334, January/February-335 March/April 1989, p.6-15.
- Hillier, B., Penn, A., Hanson, J., Grojeski, I., J.X.U. (1993) "Natural Movement or, Configuration and Attraction in Urban Pedestrian Movement", Environment & Planning B; Planning & Design, p.20,29-66.

- Hillier, B. (2001) "A Theory of the City as Object", Proceedings of the Third Space Syntax Symposium, Georgia Institute of Technology, Atlanta.
- Kabank, Y. (1991) "İstanbul'da Yüksek Binalar -ve Beşiktaş-Levent-Maslak Örneği", Master Thesis, İstanbul Technical University, p.53-54.
- Karabey, H. (2003) "Levent", Yapi Dergisi, No: 265, YEM, İstanbul.
- Kıray, M. (1998) "Kentleşme Yazıları", Bağlam Yayıncılık, İstanbul.
- King, A. D. (1990) "Theorising Difference: Culture, Globalisation And Space"- Proceedings of Culture Space History V 5, Faculty of Architecture Press. Metu, Ankara.
- King, D. A. (2005) "Spaces of Global Cultures: Architecture, Urbanism, Identity", Routledge, Taylor & Francis, London.
- Koç, E. (1998) "Planlara ve Yasal Kurallara Uygun Olmayan Yapılaşma Alanlarının Dönüşüm Sürecinde Planlamanın Etkinliği Gültepe Örneği", PhD Dissertaiton. Yıldız Technical University, p.84.
- Kubat S. (2007). "Space Syntax". Yayı Dergisi. 307. p.51-52. YEM, İstanbul.
- Moore, D. K. (2000) "Culture-Meaning-Architecture: Critical Reflections on the Work of Amos Rapoport", Ashgate Publishing, England, p.177-182.
- Lynch, K. (1960) "The Image of the City", The M.I.T Press, Cambridge, Massachusetts.
- Oktay, D. (1990) "Kentsel Kamu Mekanlarının Sosyal İşlevlerini Güçlendirme Amaçlı Tasarım İçin Bir Yöntem Araştırması", PhD Dissertation, Yıldız Technical University.
- Öke, A. (1989) "Dünyada ve Türkiye'de Yüksek Binaların Gelişmesi", Yayı Dergisi, Nisan 1989, No:89.
- Rossi, A. (1982) "The Architecture of the City", M.I.T. Press, Cambridge, Massachusetts.
- Thorns, C. D. (2004) "Kentlerin Dönüşümü", Global Yayın Ajansı, İstanbul.
- Tonkiss, F. (2005) "Space, the City and the Social Theory". Polity Press. UK.
- Torcu, K. (2004) "İstanbul'da Yeni Mekansal Oluşumlar: Beşiktaş-Maslak Eksenini", İstanbul Technical University.
- Toy, B. (1999) "Zincirlikuyu-Maslak Aksı; Globalleşme Sürecinde Değişen Kentin Gelişen Muhalefet Dinamikleri ve Planlamada Yeni Arayışlar", Şehir Bölge Planlama Bölümü Diploma Proje Raporu, Yıldız Technical University, İstanbul.
- Zukin, S. (1995) "The Culture of Cities", Blackwells, Cambridge, Massachusetts.
- Lynch, K. (1960) "The Image of the City", MIT Press, Cambridge.
- Norberg-Schulz, C. (1971) "Existence, Space and Architecture", Studio Vista, London.

### Internet References

- [1] [www.istanbul.gov.tr/Default.aspx?pid=231](http://www.istanbul.gov.tr/Default.aspx?pid=231)
- [2] [www.kagithane.gov.tr/](http://www.kagithane.gov.tr/)
- [3] [http://en.wikipedia.org/wiki/Spatial\\_network](http://en.wikipedia.org/wiki/Spatial_network)