ITU A|Z • Vol 14 No 3 • November 2017 • 113-126

Istanbul: The characteristics of vertical dense structuring and image making in high-rise housing architecture

Tuba SARI[1], Yurdanur DÜLGEROĞLU YÜKSEL[2]
[1] tugsar@gmail.com • Department of Architecture, Faculty of Architecture, Istanbul Technical University, Istanbul, Turkey
[2] yukselyu@itu.edu.tr • Department of Architecture, Faculty of Architecture, Istanbul Technical University, Istanbul, Turkey

Received: January 2017 • Final Acceptance: July 2017

Abstract

Urbanization acceleration, land shortage, the prominence of the service sector due to globalization, the development of high technology and information systems, the expansion of multinational companies as well as changing types of users have been the factors that trigger the design of high-rise buildings. The scope of research deals with five different urban centers in Istanbul where high rise housing is increasing dramatically after 2000's. Therefore, the research regards multi centered urban residential model being created by high rise housing structures in the urban area. In the framework of research hypothesis, it is aimed to prove that the character of vertical dense structuring in Istanbul is based on differentiation, form and image making in the expressive quality, considering the production of existing high rise buildings in residential areas in recent years. As the methodology of research, it is benefited from convenience sampling method while determining high-rises according to some criteria supported by thesis scope. The site analysis is realized by the help of the Sign model of Charles Sanders Peirce. The high rise buildings have been analysed in the context of icon-index-symbol sign parameters, questioning the search for differentiation, form and image.

Keywords
High-rise, Housing, Image, Multi-centered, Urban.

doi: 10.5505/itujfa.2018.44827

1.The development of high-rise housing in Istanbul: Concepts and structures

1.1. Global-local

The concept of global, which is relating to entire world rather than a specific region or country, should be considered together with the concept of local. According to the first definitions of global city, it is said that the capital is global and its spatial organization is hierarchical. Globally, the cities that provide the capital's control functions, producer services and labour world-wide are seen as reflections of this hierarchy (Keyder, 2013). Metropolises are, on the one hand, part of the network of international goods, money, people, information and indicative flow on the other hand under the geographical dominance and laws of their own countries. This results in distinctive approaches relating to different acceptation of global flows in world countries. Due to that Istanbul remains in between discourses of globalization and locality, it displays a hybrid image consisting of the concepts of confusion, contradiction and uncertainty (Gönen & Özer, 2009).

The cultural identity and the image created by the city play a key role in the competitive environment that other cities enter. Especially in cities with diverse and multi-layered history such as Istanbul, which parts of the past are to be preserved or marketed become serious political problems. The conflict between the global and the local not only affects the cities but also the language of architecture and design. From Dubai to Kuala Lumpur, skyscrapers inspired by regionalism are being built in many metropolises around the world. The major problems are how high-rise buildings affect the local identity and whether they have a local identity specific to their surroundings in residential areas to global-local relation.

1.2. Metropolis-city

The word of métropole, its origin comes from French, means big, central city and capital. While metropolises were previously bordered settlements governed with the concept of locality, they have opened up to the world and governed at the global scale with globalization. In the period of globalization, parameters such as change in the concept of border, the phenomena of global and whole world are attracting among the determinative indicators of metropolis concept. In this period, metropolises such as New York, London, Tokyo and San Francisco is no longer referred to as the world cities not with their countries (Baba, 2012). Cities are transforming into metropolises competing on a global scale from the settlements in the nation-state structure, which in turn pushes the governments of the country to work and interventions in the world city competition. Within this framework, one of the studies carried out for Istanbul to become a global world city is the need for the presence of mega projects that will speed up the transformation of the city in this context.

1.3. Skyscraper-tall building

The skyscraper, called as grate-ciel in French, is defined as 20-30 or more storey building in literature. Charles Jencks (1980) describes the skyscraper as a multi-storey building with lifts operating at high speed, steel frames used in the construction. According to one approach, buildings higher than 400 foot (122 meters) are described as skyscraper (Ford, 1992). Altan Öke (2001) emphasized that it would be appropriate to use the concept of skyscraper for 25-storey and higher buildings in the talk of Istanbul's Future and Skyscrapers panel.

Within the scope of the research, 25-storey and higher housing buildings are examined using Altan Öke's criteria for skyscrapers in Istanbul and Turkey as basis. As understood from these definitions, there are many different definitions of skyscraper, but the most important point to be emphasized is that the definition of skyscraper and tall building can change according to country, city and environmental conditions. According to CTBUH (Council on Tall Buildings and Urban Habitat) height criteria, the tall building does not have certain definition and content. Height is related to context. For cities such as Chicago or Hong Kong, known as high-rise cities, a 14-storey building may not be perceived as high-

rise, but may be perceived as higher than normal for European cities and some suburban cities (Wood, 2011).

1.4. Multi centered-single centered

Urban decentralization derives from the multitude and variety of central functions gathered in a city and is based on a system of one or more transport networks aggregated in that location. In the process of globalization, due to the lack of center in the metropolises, secondary centers, new structures outside the city, new settlements areas called neo-city has appeared in the periphery of metropolis. New constructions that are seen in the metropolitan area are changing the concepts of urban density, scale and function. On the other hand, metropolitan boundaries are merging with the walls and the periphery, clear boundaries disappear (Baba, 2012).

Based on Peter Marcuse's *Polycentrism, Concentrated Decentralization* theory, the forms of cities are constantly changing, physical and spatial changes are explained by the concepts of polycentrism and urban fragmentation (Marcuse, 2008). As the city continues to grow towards the border settlements and rural areas, a multi-centered structure emerges in the form. The evolutionary process leading to the creation of multi centered city from the single centered city seen in recent years in Istanbul overlaps with the theory of Marcuse. While high-rise buildings are concentrated only on the Büyükdere-Maslak axis, where the business centers are located, it is seen that different urban foci such as Maltepe-Kartal, Kozyatağı-Ataşehir and Başakşehir-Beylikdüzü have been created with the increasing tendency especially in the high-rise housing area. This can be seen as a micro-scale reflection of the multi-global network, as the shift of global economy based UK and United States to urban peripheries such as China and India.

2. The development parameters of high-rise housing in Istanbul: Policies

2.1. Globalization

The globalization policy is one of the policies that trigger the development of high-rise housing, and many developing countries determine the targets of development and structuring in this direction. The global urban discourse is based on the World City hypothesis, which was developed by Friedmann and Wolff (1982) and later by Sassen (2001) and a number of scholars. In many countries of the world, the arguments of this hypothesis have become an effective policy instrument. Many central and local governments have produced similar policies for the past twenty years to make their cities a global city (Öktem, 2005).

According to Friedmann, the world city is the place where the international capital concentrates and accumulates. Regional, national and international economies are articulated in these cities. World cities where global transportation, communication, news, information and culture are produced and spread, carry out important ideological and control functions (Friedmann, 1995). Sassen (2001) defined the cities of the world not only as centers of control and management but also as the cities where the production of trade and service sector and financial innovations took place and gave a new dimension to the concept of world city. The world city rhetoric explains the emergence of global cities with the emergence of a new global economy.

Developments in the world and in Turkey have led Istanbul to a new structuring process after 1980. Istanbul feels the impacts of globalization as a place where global money, capital, people, ideas, indicators and information flows are concentrated. The processes that determine the urban form have also changed with the beginning of globalization. Until this period, investments in the city have been of interest to local entrepreneurs, but have since become of interest to global capital. Between 1980 and 1998, especially foreign companies serving worldwide took place in Istanbul with the banking and finance sectors. While the ratio of foreign banks to the national banks in Istanbul in 1979 was 4%, it was determined as 20% in 1986: This rate is higher today. The first examples of high-rise structuring in Turkey have been built in Istanbul and Ankara since 1985. A rapid increase has been observed in the

high-rise initiatives in Istanbul since the 1990's (Baba, 2012).

Considering the boom of high-rise housing constructions in Istanbul on the theory of global city, these structures can be regarded as a few spatial results in the process of reaching the hierarchical structure created by the global economy on the macro scale. As a result of the global capital has become widespread since 2000, international capital groups and local governments that support these groups have entered a competition to built edifice and ambitious structures in Istanbul. With the rise of mega projects, high office and residence towers, mixed-use complexes and foreign investments developed in this context, Istanbul becomes prominent as a world city in the global economy.

2.2. Economic liberalization

Neoliberalist policies, which are expressed as opening to foreign countries in the economy, are another parameter that is effective in the development of vertical dense housing. Since the mid-1980s, the process of economic liberalization and integration with the world markets have brought also strong architectural manifestos and physical realities. These manifestos, emerging as a global phenomenon from Sao Paulo to Shanghai, depict new scales, new typologies, new diffusion policies of cities (Bozdoğan & Akcan, 2012). The ongoing spatial transformation process in Istanbul is developing as dependent on economic policies as it is in many metropolitan areas of the world. Large-scale urban projects have begun to be produced rapidly in order to attract international capital within the competitive environment determined by the free market economy on a global scale. For the last thirty years, the opening of Istanbul, the economic capital of Turkey, to the world markets with the slogan of world city has been tried to be achieved by the neoliberalist policies of the country's administrators and by the large capital groups (Birsel, 2006).

These policies, which have been dominant since the 1980s, have caused some fundamental changes in the physical structure of cities. International financial capitals, big banks, construction companies, real estate developers, international investors, units in the construction market are among the actors of this change. The opening of new areas for agricultural land or forest land for construction and the sale of public lands in major urban areas to private real estate development firms are among the developments observed in this period. On the contrary to economic policy before 1980, Turkey has adopted outward-oriented growth, sought to develop new economic institutions and to focus on the telecommunication investments that the global economy needs (Tekeli, 2009). Istanbul is transformed a city where the industry is moving out of the city and where creative industries, producer services, finance and real estate sectors are strengthened due to new economic structure.

2.3. Urbanization

One of the most important factors that initiate vertical dense construction in the housing is the acceleration process of the urbanization. Gottmann (1990) defines new megalopolis with the increase of urbanization rates in the world. Sao Paolo, Rio de Jenerio, Shanghai District, etc. cities are cited as leading examples. According to Therborn (2013) megalopolis is pioneering the organization of urban life. Skyscrapers, building elevators, city and suburban train networks, traffic lights and one-way roads have been adapted to the world at large, as part of this organization.

As the Keynesian economy left its place in the global economy, urbanization policies also changed. Global cities have become an investment object since the 1980s. Mumbai, for example, is part of the global movement for the real estate development sector, involving investors from London to Bogota (Sassen, 2012). By 2000's, cities have turned their faces, their meanings and functions into almost completely changing places with neoliberal urbanization. Within this literature, the close and complex relationships of neoliberalism have been debated by the processes of urban transformation from Istanbul to Cairo, from London to Mumbai all over the world (Kollu-

oğlu, 2014). While towers are competing in new development zones of metropolises, selected centers in the city are subject to urban transformation. It is now possible to see such operations in Istanbul operated in New York, Paris and London since the 1970s (Karabey, 2010).

Another factor affecting urban development has been giant infrastructural investments. A large number of mega-projects that are entrepreneurial for Istanbul since the 1980s are related to mobility. FSM bridge, Sabiha Gökçen Airport, Marmaray and metro constructions, the third Bosporus bridge, the third airport, tunnel of wheeled vehicles under the Bosporus, high speed train line for connection of Istanbul to Ankara, İzmit gulf bridge and highway for facilitation and acceleration of Istanbul Bursa connection, a sea channel which is required to be opened to the west of the Bosporus, a hotel in Haydarpaşa area and a desire to transform the harbour to a passenger (cruise) port are some of the mega projects related to mobility. Accordingly, today, cities are seen as potential areas of investment for mega projects mobility-based as part of a great competition of global scale. In this respect, projecting the third airport with a target of 100 million passengers indicates that Istanbul is desired to be a global hub of a much bigger city today (Özbay, 2014). Therefore, the direction of development the city and land value change depending on the transportation networks.

2.4. Housing and settlement

Besides urbanization policy, housing and settlement policies have a very important role in shaping the city. The growing city needs modern working and living spaces and the construction of the transportation network to serve these structures encourages the development of new sub-centers in the city. Modern residential areas built around these sub-centers for upper and middle income groups also appear as spatial results of this change and transformation. As part of the search for a quality life after 1980, gated communities represent housing areas based on ideal living and ideal home that are shaped around a concept, and offer leisure facilities and high-level security. Some large companies moving to the suburban of the city have occasionally attempted to make housing for their staff in residential areas close to new businesses. These settlements are similar to the rings surrounding the city, each of which is about one hour away from the center of the city, with the potential to become a center for itself on time. Basaksehir-Beylikdüzü region, which is about forty kilometers southwest of the center of Istanbul, is a good example.

Besides the spread of the urban topography of Istanbul, the leading elites who started to return to the city center in recent years prefer mostly multi storey residences which are vertical towns (Pérouse & Danış, 2005). When we look at the transformation geography of the city, residences are mostly located considering central areas of the city with offices and large business centers. The peak residence constructions are located in Besiktas-Sisli-Maslak and Beylikdüzü districts in the European side, as to Anatolian side located in Ataşehir district which is projected to be a financial center. It reveals that the residences have a strong relationship with the subway lines in addition to the office blocks. In the near future, it is predicted that residences will be increased in Bağcılar-Başakşehir corridor, Kozyatağı-Bağdat street and Maltepe-Kartal lines with the opening of the third bridge link and the foreseen airport. By examining the distribution of office areas and major business centers, Beşiktaş-Şişli-Maslak, Bagcilar-Başakşehir-Gaziosmanpaşa, Kozyatağı-Ataşehir and Kavacık regions have become the priority places for these investments. These regions, which are closely related to both bridge routes, have access and location advantage (Yalçıntan, Çalışkan, Çılgın, & Dündar, 2014).

The important element of change in Istanbul's urban development after the 2000s is the newly formed spatial development axes, depending on the development of the Central Business Area. The constructions on these axes are high office blocks and high residential constructions, which are separated

from traditional centers in the urban integrity of Istanbul. The development of the gigantic shopping and office centers that started with hyper marketing and the process that continues with skyscrapers appear as reflection places of globalization.

3. Site analysis: Reading the image of high-rise housing in Istanbul after 2000's

The method of convenience sampling, developed by Mugo Fridah (2002) was used while examining high-rise housing structures depending on the boundaries and scope of the field work. In this context, five different urban foci were determined in Istanbul based on the vertical dense structuring in the house, and several projects were selected according to the change and transformation criteria in these fields. For this article one project in each area was examined. High-rise housing structures are studied in two dimensions in the context of the effect of metropolitan city Istanbul on urban fabric and architectural design-meaning relations. As part of urban settlement decisions, it is considered to evaluate the distant and close environment interactions, the transformations on urban silhouette. In the context of architectural design-semantic relations, the use of the Semantic Method and Sign model constitutes the main methodology of the study.

Within the frame of Sign model, developed by Charles Sanders Peirce (1982), the structures are detailed according to Icon (Form), Index (Function) and Symbol (Form-Function Relationship) parameters in the scope of basic analysis questions. In the light of these semiotic parameters, it is planned to refer to the search for difference, form and image seen in vertical dense residential structures in recent years.

3.1. Metrocity Towers (1997-2003)

Until the end of 1980s, Maslak was mainly used for small industry. Especially since 1990s, Maslak has been transformed into a central business area as a result of giving the highest floor area ratio in Istanbul (Dökmeci & Terzi, 2008). By its advantages of being located between the Bosporus bridges and the surrounding road connections and having large parcels of old industrial facilities, having the highest floor area ratio of Istanbul, being close to other sub-centers such as Beşiktaş, Mecidiyeköy and Zincirlikuyu, this area where high-rise office buildings have been developed is preferred by multi-national companies and holdings. In addition, the *Şişli-Maslak* region has shown a building tendency to the needs of high-quality residential structures according to the changing user type. Metrocity Tower is a mixed-use high-rise project developed in this direction. This project, designed by Doğan Tekeli and Sami Sisa, make difference to the high-rise housing structuring in the 2000's. The building is a late modern structure that reflects the final stages of rationalization as architectural line in terms of icon-index-symbol relations. (Figure 1)

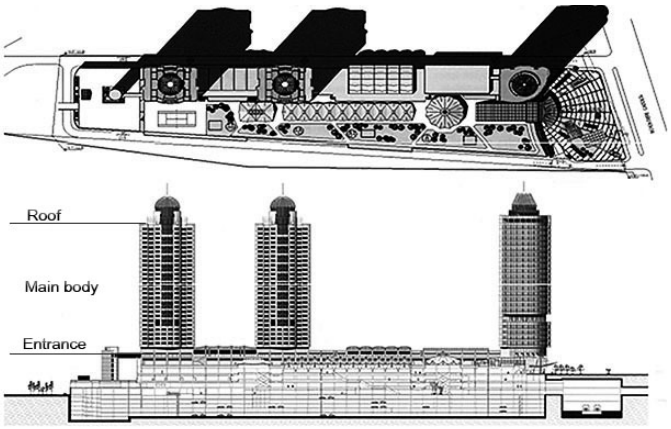

Figure 1. *The image of Metrocity Towers, site plan and section drawing.*

Figure 2. *The image showing the location of Metrocity Towers in urban silhouette.*

Icon analyses the structure with different parameters such as geometry, form-facade relation and architectural expression. The *geometry* parameter will be examined under two headings, defined or undefined. In this context, Metrocity displays defined geometries such as square prism, rectangular

prism and sphere. These geometrical relationships give static, linear and rational lines to the façade. Given the main expressions emphasized in the architectural design concept, modern, universal language and local technology become prominent.

Index analyses the structure with building type, function and secondary functions loaded into structure. Metrocity is a mixed-use complex that houses shopping, office and residential functions within the project. There are also social and sports areas that serve the main functions of the building. With a variety of functions and possibilities, the building refers to the image of modern housing that offers contemporary living and comfort in the era when it was built.

Symbol analyses the structure with several parameters such as form-*image*, order, rhythm and silhouette examining form-function relations. In the context of form-image relations, Metrocity towers reflect finished form image as well as rational, static and linear façade lines. The parameter of *order* analyses the structure in respect to use of symmetry, asymmetry, axes and façade-mass relations. In this respect, Metrocity residential towers are located using the symmetry and axial arrangement in the site plan. There are two twin residential towers reflecting the same architectural form and character in the project. Considering *facade-mass* relations, Metrocity residential towers can be read as three different parts: At the entrance, it appears that the building is sitting on a linear shopping center. The main body consists of the residential units, which is one of the primary functions of the architectural structure. In the roof part, elevator tower, ventilating and installation are hidden in a dome roof. The dome roof is seen as a differentiating element considering form-image relations of the structure. In addition to that, the structure has a mass *rhythm* determined by static and repetitive twin towers.

The parameter of *silhouette*, apart from questioning the urban fabric the structure is located, assesses the reflection of building appearance in urban silhouette and aerial photographs. There are many high-rise offices and residential towers due to the reconstruction permit for high-rises in Şişli-Maslak axis, the central business area of Istanbul. Also, there are many low-rise neighbourhoods around of the high-rise buildings. Although Metrocity residential towers are not completely integrated to urban fabric, the project is approved for the silhouette of Istanbul as height and proportion. (Figure 2)

3.2. Batışehir (2011-2015)

Başakşehir-Beylikdüzü area is one of the sub-centers in Istanbul with new developing projects, such as high-rise offices, residential buildings as well as gated communities. Bağcılar, Güneşli, Basın-Ekpress line, Basaksehir and Beylikdüzü are the main points in this sub-center vertical residential development is seen. Batışehir is a mixed-use project that takes an important role in developing a new center for the city, analysed in the scope of research. Designed by Bünyamin Derman, the project brings recognisability around the structural environment and displays expressionist lines in terms of icon-index-symbol relations. (Figure 3)

Icon Batışehir displays undefined, combined *geometries* in form of the towers. A curvilinear, dynamic and fluid movement has been created by functional units which are not separated by sharp boundaries on the façade. Looking at the *architectural expression* that makes an iconic impact on the project, the skyline relationship established with the northern forests is one of the main ideas that give direction to its design.

Index Batişehir is a mixed-use project with residential, office, hotel, educational and commercial functions. Social and sports areas, green recreation areas, urban gardens, cafes, restaurants and playgrounds are secondary functions that serve the main functions. The functional image of the structure exhibiting a distinct urban image in the city is shaped on multiple functions and their integration, and it suggests a quite high density for the area.

Symbol The Batişehir displays an unfinished *form image* in the context of form-image relations. The design rela-

tionship established with the metaphor of the mountain creates a fluid and dynamic image effect on the form. The *order* parameter indicates that the settlement of the project uses defined axles on the site plan while having asymmetrical order in design. Batişehir consists of different height blocks which rise in accordance with the silhouette in terms of *façade-mass* relations. The *order* of the functions is aimed at a multi-layered design. The project, which includes trade, office and residential blocks on the southern border overlooking the highway, transforms into housing blocks, which form their own courtyard and interior on the northern side. The building units that constitute the massive *rhythm* give the facade dynamism with the influence of functions that are not separated from each other by sharp boundaries. The *silhouette* is used as a design idea in this project. It creates its own silhouette based on the skyline relationship established with the northern forests. The fluctuations in the topography have been reflected as a metaphor to the structure and the heights of blocks are determined by protecting this silhouette. Batişehir does not directly affect the existing silhouette of Istanbul, however the silhouette relation with the northern forests gives direction to the architectural design and the structure constitutes its own silhouette. (Figure 4)

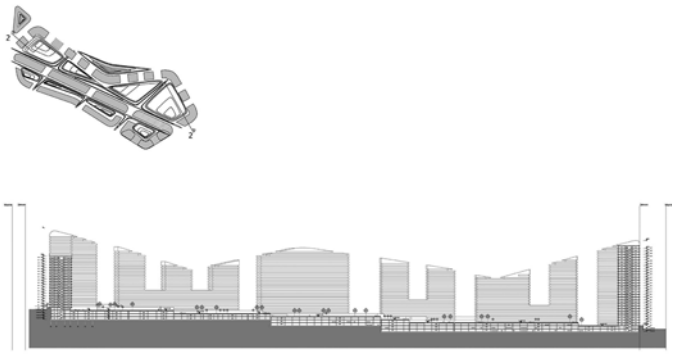

Figure 3. *The image of Batışehir, site plan and section drawing.*

Figure 4. *The image showing the location of Batışehir in urban silhouette.*

3.3. Safi Espadon (2011-2014)

In the Anatolian side of Istanbul, a new center is needed for trade, tourism, finance, housing, culture, management and recreation areas and uses, which revitalizes of central business area and provides both workforce and transport link between two sides of the city. In this context, Maltepe-Kartal and Kozyatağı-Ataşehir are defined as primary centers. It is foreseen that the center of Maltepe-Kartal will develop as a center with a high level of service sector due to the reasons such as the proximity to Sabiha Gökçen Airport, the industrial areas in the transformation period, the existence of transport projects supporting this region, and so on. In this respect, Safi Espadon is examined as a residential high-rise project that contribute to development of this new urban center.

Designed by Dome+Partners Architecture, Safi Espadon displays the formalist lines of postmodern period in terms of icon-index-symbol relations. The building is designed with a unique form of flow. This developed sculptural architectural skyline carries a crustal character, which is breaking the form-function relation in architecture. It has also an expressionist attitude as a symbolic structure that brings recognition around. (Figure 5)

Icon There is a single *form* which is obtained by interposition of segments in three different dimensions. The facade created by the combined *geometries* displays defined geometries. In the façade, a single iconic form was reached from the combination of sail blocks in three different sizes.

Index Safi Espadon is designed as a residential high-rise project. The building consists of secondary functions such as commercial units, sports facilities, recreation areas and parking in addition to the residential function. The flashy and teatral form of the structure leads to the function, and a deductive, form-oriented design understanding is being developed.

Symbol As part of *form-image* rela-

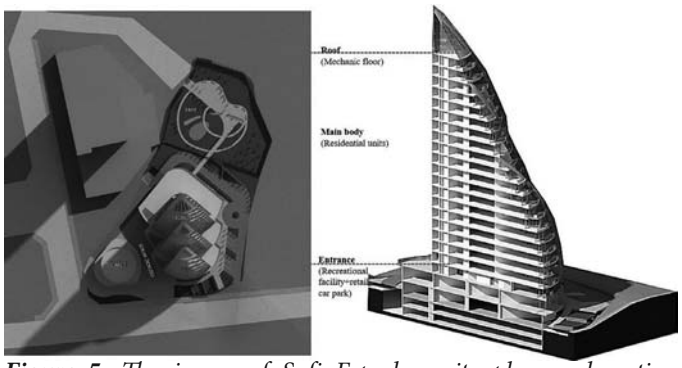

Figure 5. *The image of Safi Espadon, site plan and section drawing.*

Figure 6. *The image showing the location of Safi Espadon in urban area.*

tions, Safi Espadon reflects sculptural and dynamic lines with finished form image in the design of residential tower. The building has an architectural image that displays itself as a symbol high-rise. In the context of the *order* parameter, the housing blocks appear to be sitting on a symmetrical and axial plane. In addition, the order of residential blocks provides different facade views and landscapes. The architectural structure has been analysed in three parts in terms of *facade-mass* relations. It is observed that the triple housing tower is sitting on a basement where secondary functions and social areas are located in the entrance section of the building. It is designed with the same planimetric form of segments for residential functions. The main body consists of three residential blocks, each having different sizes. The pointed ends that give the structure sail form are the roof part of the structure made of steel construction in triangular prism shape. In the massive *rhythm*, three different size of blocks come together to create a single form, which gives movement to the façade and the mass.

When the *silhouette* and its position within the urban texture are examined, the structure is located on the E5 main transport artery in Kartal which is the focus of urban development and transformation of Istanbul on the Anatolian side. The urban fabric around the building is mainly industrial and residential. Therefore, it is considered as a symbolic structure that is expected to contribute to the urban transformation of the surrounding area. (Figure 6)

3.4. Dumankaya İkon (2007-2012)

Kozyatağı-Ataşehir is defined as a high-level service center with an international financial center in line with the potential and current trends of the region. Dumankaya Ikon, is a high-rise residential project in the area, leads to urban transformation in the center with new residential settlements and gives a new silhouette to the city. Designed by Tago Architects, the residential tower displays the expressionist lines in terms of icon-index-symbol relations. The idea of creating a new icon and landmark with a triple skyscraper design in Istanbul supports the concept of imagery. Therefore, the architectural language reflects an expressionist approach of image quest on the urban fabric. (Figure 7)

Icon The Dumankaya İkon project is simulated to the three-leaf clover form in the site plan. Three elliptical towers and floor gardens linking these towers are the first perceived elements on the facade, and the façade displays defined *geometries*. The project is designed to be one of the new icons of the city according to its architectural concept. In addition to that, it seems that the height image of the structure is emphasized in the urban tissue.

Index Dumankaya İkon is a residential high-rise project involving residence and home-office functions. The majority of the secondary functions serving the residential functions are separated to social facilities such as swimming pools, playgrounds, landscape terraces, walking and running track, fitness center some other residential services. With the choice of such living spaces offering residence

comfort, the functional image of the housing turns into a multifunctional structure beyond just being a living space.

Symbol The form of Dumankaya İkon has sculptural and dynamic lines as part of *form-image* relations. The building has an architectural image that shows itself as a symbol. In the context of the *order* parameter, the structure is placed in site plan with respect to a certain symmetry and axial plane. In addition, the layout of the residential towers provides different views to the apartments. The structure has been analysed in three parts in terms of *facade-mass* relations. It is observed that the triple housing tower is sitting on a basement in the entrance section of the structure. The secondary functions and social life areas are designed for these three towers as a base with curvilinear form. The main body includes three residential towers and floor gardens that connect these towers on every ten floors. The roof of the residential towers is highlighted by the pediment line, with the same architectural language of main body structure.

The massive *rhythm* displays a dynamic and variable rhythm as the result of connecting of the triple housing tower with floor gardens. Floor gardens, imaginatively and functionally, soften the monoblock-individual image perception, opening interspaces to the structure apart from connecting the towers to each other. Dumankaya İkon has an important role in the urban area in terms of the proportion and height of towers as seen in Şişli-Maslak axis of Istanbul, which supports the decentralization of vertical dense housing in Kozyatağı-Ataşehir area. In terms of *silhouette*, the structure, differing from the urban context by its height and architectural image, completely changes the urban image and silhouette as a mega-structure that triggers the urban transformation of the surrounding neighborhoods and residential areas. (Figure 8)

3.5. Ottomare Suites (2009-2014)

Historical peninsula and walls development area represents the old center and its periphery in Istanbul. The high-rises are built with residence, hotel and office buildings in recent years due to the need of luxury living in the city center. Ottomare Suites is a mixed-use high-rise project in Zeytinburnu, which transforms the silhouette of the city.

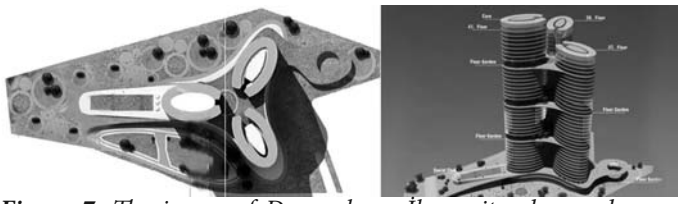

Figure 7. *The image of Dumankaya İkon, site plan and mass perspective.*

Figure 8. *The image showing the location of Dumankaya İkon in urban area.*

The project, designed by Evrenol Architecture, displays the lines of post-modern period in terms of icon-index-symbol relations. In respect to design, the structure makes symbolic reference with a lighthouse concept which indicates the passage to the Black Sea for vessels and cars driving along the coast road. The building offers interesting building facades, visible both by sea and by land. The use of colour on the facade, expressing of the structure, the movement and the dynamic lines provided by the horizontal and vertical elements, are read as a critique of rationalist and egalitarian design of modernism. (Figure 9)

Icon The Ottomare Suites project has a curvilinear and free form in the planimetric plane. The residential tower formed by the main block emphasizing the tower with the terraces extending in wave form presents the combined (defined+undefined) *geometries*. In this context, the form of the building displays dynamic and variable lines on the facade. As part of the architectural expression, it is pointed out that the project will contribute to the urban renewal of the city.

Index Ottomare Suites is a mixed-use project that involves residential and apart hotel functions. Also commercial

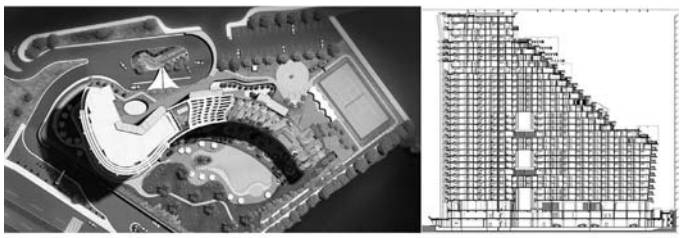

Figure 9. *The image of Ottomare Suites, site plan and section drawing.*

Figure 10. *The image showing the location of Ottomare suites in urban area.*

areas, social facilities and sports facilities, professional hotel services are other functions in the project. Social facilities and services accompanying the function of the residence in the building possessing many of the specialized residence services are reflected as the signs of high standart life image.

Symbol The Ottomare suites has sculptural and dynamic lines in the context of *form-image* relations. It is known that the design of the project is inspired by the lighthouse. The reflection of the lighthouse image to structure design has caused the residential tower to acquire a monumental and sculptural character. The *order* parameter displays that the structure sits a symmetric and axial order with the use of certain axes in site plan, parallel placement to the road and dominating façade to the silhouette. As *facade-mass* order, the podium of the residential tower is located in the entrance section, where secondary functions such as sports and social areas are located in terms. At the main body, it is known that there are suites which are specially designed for users according to different concepts (Terrace suites, Blue suites, Dublex suites, Unique suites, Limited suites, Panoramic suites). In this context, the differentiation of the apartments in the residential tower in a design sense reflects a variable order. Finally, the roof of the tower was finished in a sculptural form, reflecting the concept of a lighthouse. The apartments located in here are named as Captain's suite and Sky suite.

The massive *rhythm* is formed with a combination of a monoblock mass and moving terraces. Apart from massive rhythm, curvilinear surface plates and glass surfaces supporting it are desired to make some movements in vertical and horizontal direction by the expression of variable rhythmic terraces on the facade. In terms of *silhouette*, the urban fabric around the structure directly affects the silhouette of the Istanbul in respect to its closely relationship to the historical peninsula and the Sea of Marmara. As a result, this situation has led to controversy and has been tried to reduce the height and number of floors of the building. (Figure 10)

4. Discussion

Housing design acquires new images and meanings on a global scale with strong, symbolic and massive images of high-rise buildings due to the fact that the height criteria is preferred not only in office and otel structures but also in residential structures. The reflections of the recent architecture on the urban image and silhouette, as differentiation, form and image quests have increased in parallel with the height case, have become the main debate issue of architects and urbanists and civil society organizations.

The local, historical character and silhouette of the city of Istanbul is in a constant struggle with the global iconic image that urban authorities have been trying to construct. Urban image and silhouette are clearly changing and creating a multi-layered structure, with the integrity of global and local patterns. A spontaneous urban image and silhouette is emerging as a result of the construction of high-rise buildings, contrary to the current development plans, by obtaining privileged development rights and by carrying out plan renovations. According to Baykan Günay (2006), from the urban and regional planning discipline, contrary to the comprehensive public-focused

planning of the most developed cities in the world, the absolute return of the landed property was brought to the forefront along with the property law.

Some skyscraper projects planned or in the construction process in Istanbul have been the subject of some public cases opened by the Chamber of Architects related to the plans and licensing decisions, yet the expected steps have not been realized. While it is discussed as a primary issue how these skyscraper projects will affect the city skyline, it turns out that the main concern is not only the building but also the urban fabric. If the relationship between high-rise building, architecture and urbanism is not correctly assessed, these structures will continue to be perceived as a barrier that distorts the silhouette of the city.

5. Conclusion

Vertical dense residential buildings have increased based on the reasons such as the rise of urbanization, land shortage, the development of high technology and information systems, the expansion of service sector with multinational companies as well as the change of user and lifestyle in Istanbul. High-rise residential development in Istanbul depends on several policies of globalization, economic liberalization, urbanization and housing. With the rise of mega projects, high office and residence towers, mixed-use complexes and foreign investments developed in this context, Istanbul becomes prominent as a world city in the global economy. In the process of globalization, due to the lack of city center, sub-centers and new residential development areas has appeared in the periphery of Istanbul. In the past, high-rise buildings were located densely on the Şişli-Maslak axis being the central business area of the city. However, Maltepe-Kartal, Kozyatağı-Ataşehir and Başakşehir-Beylikdüzü have appeared as new developing sub-centers in the city, which is in line with the multi-centered urban development model in Istanbul. There are five different urban foci where vertical dense housing has been concentrated, which led to the urban transformation of the area with new developing projects, uses and functions. One high-rise project from each residential development area is selected for the site analysis and examined according to Semantic method and its sign model.

Within the frame of *Sign* model, the projects which were analysed according to Icon, Index and Symbol sign parameters are Metrocity towers in Şişli-Maslak area, Batışehir in Başakşehir-Beylikdüzü area, Safi Espadon tower in Maltepe-Kartal area, Dumankaya İkon in Kozyatağı-Ataşehir area and finally Ottomare Suites in Historical Peninsula and Walls area. All of these high-rise projects reflects multiple images according to icon-index-symbol sign analysis. Although they use mostly a rational order based on geometric form relations on site plan and floor plans, the facades can be differentiated as form and image. In terms of geometry, they display usually combined geometries consisting of defined and undefined geometries as seen in the projects such as Batışehir, Safi Espadon, Ottomare Suites and Dumankaya İkon.

Being one of the early examples of high-rises of Istanbul, Metrocity towers is a late modern structure that reflects the final stages of rationalization as an architectural image. It uses defined and rational geometries both on site plan and façade apart from other projects. As part of façade-form relations the geometry brings iconic form image to the structures with dynamic and sculptural lines as seen in Safi Espadon and Dumankaya İkon projects. There is also disconnection between the form and function relationship in some high-rise residential buildings such as Safi Espadon. The form is used generally as a shell covering the functions in the building, which is the attitude of expressionist and post modern architecture. The façade, the form and the plan are not integrated with each other in most high-rise residential buildings. While the plan uses a rational order, the façade and the form show dynamic and changeable images in line with icon-index-sign relationships. In this respect, it cannot be talked about an integrative approach on the basis of architectural image and design. On the contrary, the image is used just as

formalist attitude on high-rise housing projects.

In addition, the main problem of high-rises in Istanbul, the buildings are not integrated with urban fabric, as seen in Metrocity, Ottomare, Dumankaya İkon and Safi Espadon projects. All of these high-rises give a new silhouette to the city of Istanbul, but they indicate the lack of integrated urban design at macro scale. The issue of polarization and integration in the global metropolis is a major problem in terms of developing world cities. The new urban structure caused by globalization consists of irregular crosses of differentiated textures, which prevents integration at macro scale. In this respect, Istanbul is similar to the examples of world cities such as Mumbai, Mexico City, Sao Paulo in the context of both social and physical problems.

References

Baba, E., C. (2012). *Tasarım Demokrasisi ve İstanbul: Küreselleşme Sürecinde Yüksek Yapılaşma.* İstanbul: Sosyal Yayınlar.

Birsel, C. (2006). Kentsel Dönüşüm, Çözülen Kentler ve Parçalanan Kamusal Alan. *Mimarlık*, 327(42), 21-25.

Bozdoğan, S., & Akcan, E. (2012). *Turkey: Modern Architectures in History.* London: Reaktion Books.

Dökmeci, V., & Terzi, F. (2008). *İstanbul'da Gayrimenkul Pazarı.* İstanbul: İTO Yayınları.

Duru, B. (2001). Gökdelenler ve Kent: Prof. Dr. Cevat Geray' a Armağan. Retrieved 22 Aralık 2016, from Mülkiyeliler Birliği Yayınları http://kentcevre.politics.ankara.edu.tr/durugokdelen.pdf

Ford, L. R. (1992). Reading the skylines of American cities. *Geographical Review*, 82(2), 180-200.

Fridah, M. (2002). Sampling in research. Retrieved 22 Aralık 2016 https://journals.uonbi.ac.ke/fridah_mugo/publications/sampling-research

Friedmann, J. (1995). Where we stand: a decade of world city research. In P. L. Knox & P. J. Taylor (Eds.), *World Cities in a World System*. Cambridge: Cambridge University Press.

Friedmann, J., & Wolff, G. (1982). World City Information an Agenda for Research and Action. *International Journal of Urban and Regional*, 6(3), 309-344.

Gottmann, J., & Harper, R. A. (1990). *Since Megalopolis: The Urban Writings of Jean Gottmann.* Baltimore: John Hopkins University Press.

Gönen, E., & Özer, F. (2009). Çağdaş İstanbul Post-Modern mimarisinde Neoklâsisizm. *İTÜDERGİSİ/a, 8*(2), 37-50.

Günay, B. (2006). Kentsel dönüşüm, Çözülen Kentler ve Parçalanan Kamusal Alan. *Mimarlık*, 327(42), 33-34.

Jencks, C. (1980). *Skyscrapers-skycities*. London: Academy Editions.

Karabey, H. (2010). Küreselleşen İstanbul. *Mimarlık*, 356(47), 16-43.

Keyder, Ç. (2013). *İstanbul Yerel İle Küresel Arasında*. İstanbul: Metis Yayınları.

Kolluoğlu, B. (2014). Şehre Gören Gözlerle Bakmak. In A. B. Candan & C. Özbay (Eds.), *Yeni İstanbul Çalışmaları, Sınırlar, Mücadeleler, Açılımlar.* İstanbul: Metis Kitap.

Marcuse, P. (2008). Globalization and the forms of cities. In M. Jenks, D. Kozak & P. Takkanon (Eds.), *World cities and urban form. Fragmented, polycentric, sustainable.* New York: Routledge.

Öktem, B. (2005). Küresel Kent Söyleminin Kentsel Mekanı Dönüştürmedeki Rolü. In H. Kurtuluş (Ed.), *İstanbul'da kentsel ayrışma: mekansal dönüşümde farklı boyutlar* Istanbul: Bağlam Yayınları.

Özbay, C. (2014). Yirmi Milyonluk Turizm Başkenti: İstanbul'da Hareketliliklerin Politik Ekonomisi. In A. B. Candan & C. Özbay (Eds.), *Yeni İstanbul Çalışmaları, Sınırlar, Mücadeleler, Açılımlar.* İstanbul Metis Kitap.

Peirce, C. S. (1982). Writings of Charles S. Peirce: A Chronological Edition. 8.

Pérouse, J.-F., & Danış, D. A. (2005). Zenginliğin mekânda yeni yansımaları: İstanbul'da güvenlikli siteler. *Toplum ve Bilim*, 104, 92-123.

Sassen, S. (2001). *The Global City: New York, London, Tokyo.* New Jersey: Princeton University Press.

Sassen, S. (2012). *Cities in a World Economy*. California: Sage Publications.

Tekeli, İ. (2009). *Konut Sorununu Konut Sunum Biçimleriyle Düşünmek*. İstanbul: Tarih Vakfı Yurt Yayınları.

Therborn, G. (Ed.). (2013). *Global Cities, World Power, and the G20 Capital Cities* (Kuniko Fujita ed.). India: Sage Publications.

Wood, A. (Ed.). (2011). *Best tall buildings 2008: CTBUH internation al award winning projects.* New York Routledge.

Yalçıntan, M. C., Çalışkan, Ç. O., Çılgın, K., & Dündar, U. (2014). İstanbul Dönüşüm Coğrafyası. In A. B. Candan & C. Özbay (Eds.), *Yeni İstanbul Çalışmaları: Sınırlar, Mücadeleler, Açılımlar*. İstanbul: Metis Yayınları.