

## Urban sections

**Nurgül YARDIM<sup>1</sup>, Orhan HACIHASANOĞLU<sup>2</sup>**

<sup>1</sup> nurgul.yardim@bilgi.edu.tr • PhD Student, Bilgi University, Istanbul, Turkey

<sup>2</sup> orhan.hacihasanoglu@ozyegin.edu.tr • Faculty of Architecture and Design, Özyeğin University, Istanbul, Turkey

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### **Abstract**

Today, the perception of layered transportation infrastructure has to be merged with the architecture and urban design. Especially the underground transportation modes affect the grounds of the city. This study focuses on investigating the relations of grounds and the transportation infrastructure. Exploring the interaction level of urban spaces with the transportation systems in terms of their expansions below and above the ground is the problem itself. Moreover finding a relation between urban spaces, transportation hubs and their typologies and how these typologies shaping urban grounds in the transportation context. After that, İstanbul is the case area of analyzing the urban land with respect to ground and underground relations and typologies that have examined. The selected zones of İstanbul for showing the relation between ground and transportation have the major quality of being in the networks of city transportation system and these are supported by the map called 'typology mapping'.

### **Keywords**

Transportation infrastructure, Urban section, Urban ground, Sectional typologies, Architectural diagrams.

## 1. Introduction

*“Anything is possible to build, or not to build, we could therefore ask the question as to why styles and fashion and methods tend to become common practice within our environment” (Alsop and Störmer, 1993).*

In this study, investigate the importance of grounds and having relation with the transportation infrastructure spaces are the main purposes to reach. As societies become increasingly urbanized, decision making and spatial viability make cities more and more complex. So that, the analysis is a multi dimensional way both for public-private-social collaborations and urban infrastructure. According to Safier “Cities are the most complex, dynamic and powerful systems for generating and transmitting wealth and well being for very large numbers of people that have so far been evolved by humanity”(Safier, 1993). Moreover, cities are places where great differences and determined poverty can effect boundaries. The characters are sharpened by the contemporary globalization that restructuring the layouts of urban life. These layouts are very large scale and capital intensive. Therefore urban lands and settlements are shifting on the basis of globalization. Urban transportation systems are significant determining parts of daily functions. Particularly after the first half of the 20th century, people’s movement capability in the cities are limited. Afterwards, cities become important centers of global and national economics then this leads to transportation systems are restructuring accordance with the needs of developments. As the cities getting modernized by the help of economical developments, the city has more mobility than ever.

Bain stated that underground spaces are invisible so that their design has difficulties. They need to make people aware that there is a space. It is the role of their entrance spaces (1990). The space that allows people to go below the surface. So that entrances should give people sense of arrival, the mood of the structure and they have a strong identity reflecting a place of psychological and physical transition between the exte-

rior and interior world. The analysis part of the study is made for reflection of transportation infrastructure by covering selected transportation hubs in İstanbul. This is based on a backward reading about the typology development. In this context, a map of İstanbul’s rail network is superposed by the constituted typology forms.

## 2. The aim and the scope of the research

As the cities grow, need for infrastructure is formed. This is not an end product, infrastructure also develops and changes its capacity year by year. The reason is that citizens wants to move and they need more construction and more layered infrastructure. Infrastructure was modelled by architects. Their approach is making a plan and understanding the capacity of a clear idea would bring order to the chaos of the metropolis. The major goal of this study as Lerup states, city and mobility relationship. As mobility is a key to a high standart for living and transportation routes are being expanded and connections are being improved, the more speed is being increased in this society (Lerup, 2004). Besides, the word ‘infrastructure’ is defined in 1927, Oxford English Dictionary; “To understand the technical systems that support a society roads, bridges, water supply, wastewater, flood management, telecommunications, gas and electric lines as one category, it was first necessary to see it fail”. These definion of supporting systems all together rely on the city’s transformation in architecture indeed. According to the report of Urban Age Report in 2009, allowing centralization of economic functions and the accomodation of a growing population on metropolitan rail and bus routes; transportation infrastructure is a crucial driver of urban form and structures. Moreover, where public transportation is not placed regularly then motorways begin to dominate the space that will result in stragglng forms of development and over-crowding as private car use persistently runs ahead of road building. Every surface of the city take the meaning of transition zone. This view of transition zones help cities to inte-

grate the transformation infrastructure with the urban ground. In short, public spaces linked and thought with the transportation modes and edited by functional passages in society. As seen in the diagram (See Figure 1), public spaces can shift and scale where the transportation infrastructure and ground interacts.

Multilevel infrastructure deals with mixing different urban functions into the same urban structure in order to create a social blender. Functions such as public transportation, parking facilities and other possible amenities like a flea-market or temporary exhibits come together and impact the urban life. They create borders as they make new connections with these spaces. Possibilities of new urban structures are coming from the existing site conditions somehow. The projects which care the multilevel infrastructure work through the levels of the site. Today this kind of approach changes through more dynamic relations. New sectional variations are searched for the interaction of ground and infrastructure. The ground level takes

the public mission in itself at the same time combined with traffic solutions. Ground level is the transitional part of the transportation typologies. It has paths and corridors along the fields, has borders and multi-layered sections. The physical importance of the urban ground is that, behaves like a base for the transportation infrastructure. The city's dynamism affects its borders, its pattern and its ways. In the diagram (See Figure 2), the ground dynamism can be seen.

Understanding the ground in the new, dynamic city one should have a look for below and above the ground relations with the infrastructure. Besides, ground has the power to change space qualities. For instance, raising the population in daytime is possible by placing the ground level in different forms. This choice merges for making the ground level more crowded, and make the area of mixed-used functioning.

Beside the infrastructure relations, this study takes the public space as an issue. In the contemporary level; economic movements and activities have the supreme effect on urban grounds. In other words, the life style of people in cities, their purchase power and movement capacity has directly affect the public space.

Today public space is a process of structuring the urban environment and the infrastructure levels of the city. When interpreting 'public space', the functions of infrastructure and city have to be taken into consideration. More public the relations get, the spaces getting more mobile. They can be structures placing in the city like transitional zones. These complex spaces should have been understood by the governance. To the side, their integration with the public transportation or private cars is the management problem (The City Factory ). When analyzing public space, properties became prominent as collective spaces, welcoming places and accessible spaces. Their respond to the citizens' daily needs is important and make the good feelings for the city. To be sure these kinds of expectations from the public spaces are not only related with their characteristics of

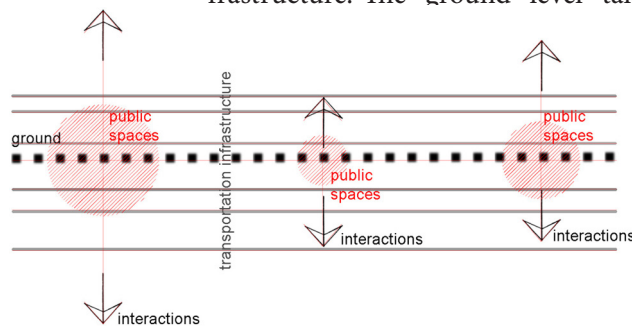


Figure 1. Transition zone diagram (Yardım, 2012).

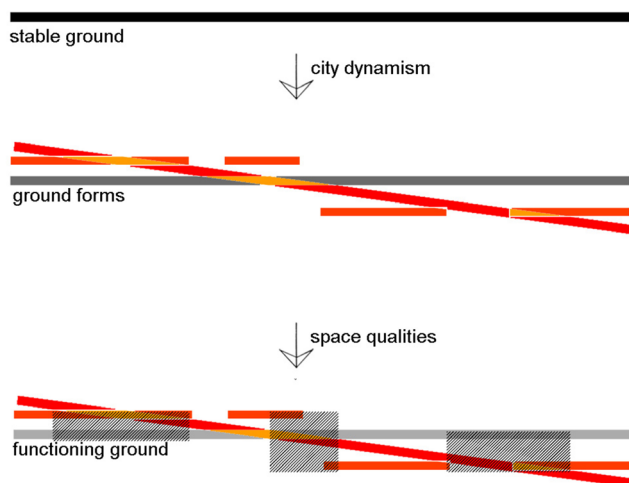


Figure 2. Ground diagram (Yardım, 2012).

place but also the interaction with the transportation levels of the land. Considering the public space, the publicness level decreases through the underground. It can be reasonable saying the transformation has reasons like necessity, curiosity and trying to escape from the space, by widening it. This is possible in a very restrictive sense, or by searching to utilize the third dimension, upwards or downwards.

The use of underground is a preference in the city. In the concept of 'artifice of hiding' Shannon&Smets discuss about the layers of city which goes to the underground and begins to hide. Thinking with these definitions of infrastructure, public space and underground worlds, the study has the idea about urban sections. Sectioning the urban land, demonstrate the concept of urban public space's significance. These sections are needed to understand the area in both directions in space. The horizontal and vertical dimensions of the space and their important qualities can be shown in fully sections. Conceptually, these sections exist in between building heights, facades, sloped forms and ground line. According to White, sections show the shape of space and its relations with the activities in the area take place (White, 1999).

### 3. Material and methodology

"Space is neither absolute, relative or relational in itself, but it can become one or all simultaneously depending on the circumstances. The problem of the proper conceptualization of space is resolved through human practice with respect to it" (Haug, 1993).

In this research, the analysis of layered transportation infrastructures and their architectural diagrams are the main initiatives put into practice. In the same way the underground space formations and their ground level relations are to be analyzed in the study. The examination is mostly placed on section drawings of the projects. These sections are including the project transportation and functional layers and also the structures' interaction with the all urban environment

in both vertical and horizontal manner. Equally important, to explain interaction levels in the city context, typologies of transportation structures are introduced with their differences in the ground relations. Nevertheless, these typology making process has certain parameters. For this, analyzed case projects' values, their philosophies and conceptual approach of interaction are used. In this case, there exist new relations and parameters. At the same time, due to the impact of relations between underground structures with urban space, the value of research coming from the attitudes of integration. Therefore, one of the determining factors in the selection of the section diagrams to be analyzed is their hint of the transportation modes and program elements they include; and that the visuals of the case projects should give an indication of their urban contexts. Furthermore, this methodology has a chance to answer the questions for the typological approach.

Even though this study's method is primarily intended to put forward a useful, multi layered thinking of urban grounds and underground, the answers of the questions about the city, time, mobility and the transformations of all are have been thought. On the other hand, following questions are used for helping through thesis in its methodological approach.

Why is the urban space affected by transportation infrastructures?

- How can the interaction level of urban spaces with the transportation systems analyzing in terms of their expansions below and above the ground is the problem itself?
- How infrastructural values are shaping urban spaces in the transportation context?
- How can architecture and urban design enhance the social and commercial potential of the transport interchange?
- Can architecture continue to relate the space of structures and cities, when this space itself, is dissolving into a universal flow?
- What are the mediums that coming from the below to above in urban context?

**4. Below and above ground structure typologies conceptual framework**

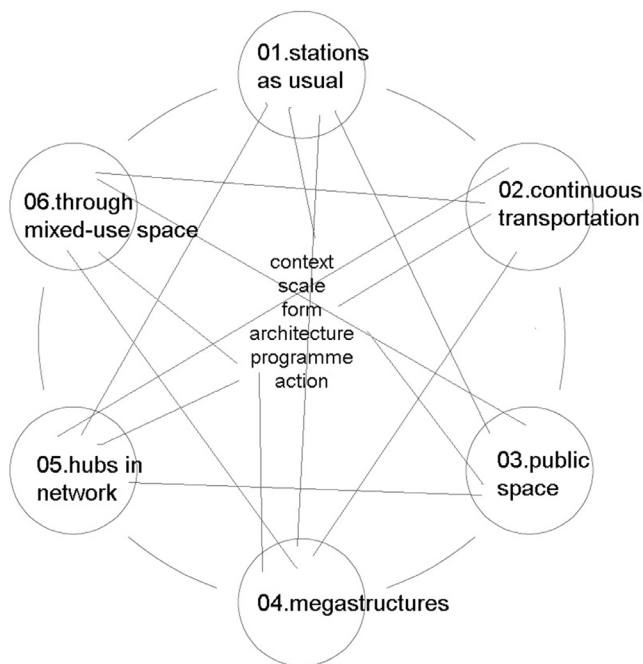
Urban space relationship is the experience of analyzing interactions and to fit the typologies. In this context, urban grounds are important tools for overcoming the design process of structures both underground and superstructures above the ground. To make an interaction level with the urban sections and ground, this terminology can help. In addition to that, taking the important parts of the case study sections and their analyses help to improve these “coding and typing” process (See Table 1).

Below and above structures have always been places for citizens to visit, to live or to pass. From this view, with the help of the parameters in

**Table 1.** Coding and typing process (Yardim, 2012).

context	architecture
scale	programming
form	action

**Table 2.** Parameters and typology codes (Yardim, 2012).



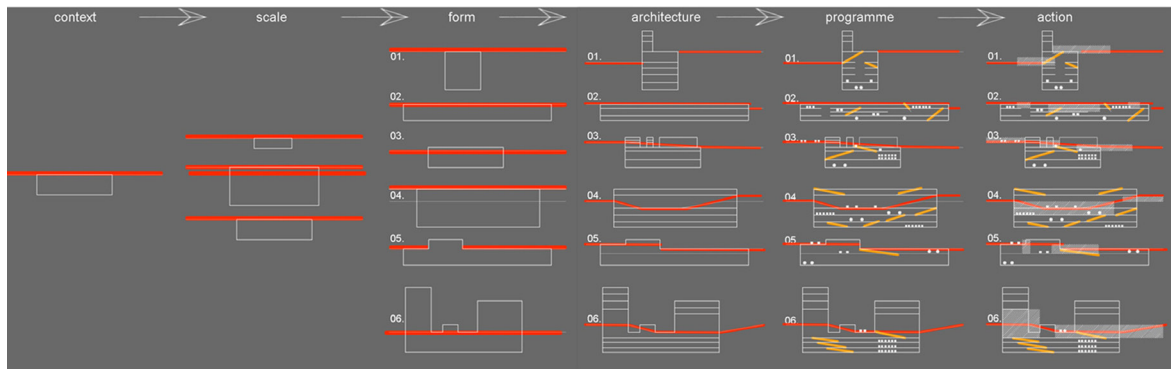
Urban sections

their design and relation process, it is a way to represent types of structures. The condition of the system ‘structure’ can adapt it very different forms including layers of the site. The important thing is that the transportation modes are intersecting mostly the underground. Especially while examining the relations or typologies of them, ground level transportation is not so much effective on typologies. The rule for classification follows a logic of identifying major parameters of urban structures which are intrinsic to the functioning of transportation spaces. These ‘parameters’ are shown in the sections of the land. All aspects of the urban grounds are going to define by the sectional analyses. Since these sections are perceived by the legends of the transportation, urban ground and users, they include definitions and examples of everyday urbanism. As seen in the Table 2, there appear to be six primary types of urban in between transportation related structures, namely; ‘stations as usual’, ‘public spaces’, ‘continuous transportation part’, ‘megastructures’, ‘hubs in network’ and ‘through mixed-use spaces’.

These codes refer the parameters of the existing typologies. The Figure 3 shows the process of developing typology codes. Step by step it contains the context, scale, form, architecture, program and action.

**4.1. Stations as usual**

We are living through the transition spaces and we all experience our days in different types of urban structures. Yet a very important shift is that, awering of the ground levels as much as the underground. Today, city’s multi-modal passanger interchanges are tranforming from becoming only transport centers. There are offices and shops around railway stations; restaurants, supermarkets and meeting facilities are developed in motorway service areas; pedestrian zones specialize in services oriented toward tourists and other occasional visitors, and hotels, conference centres, commercial and entertainment centres are springing up around airports (Bertolini, 2006). The desire to stop



**Figure 3.** Developing typology codes (Yardımcı, 2012).

the transportation in points of new functions is the conceptual frame of stations. Stations as usual are the “schematic basis” of modern transportation life (See Figure 4).

It is interesting to relate Augé’s definition of non-place with the stations as usual respectively. Multi-modal passenger interchanges are cases of ‘non-places’ rather than public space and they reduce the social relations and sense of identity. This approach argued increasing mobility has allowed space as a transit zone, as a station. Then these called non-place experience change the physical environment and conditions of city (Augé, 1995). On the other hand, Bertolini fully aware of the stations as a structure of living. His words “Let us take the case of railway stations. For those who work there, stations are, instead of being non-places, places where socialization and/or conflicts take place, just as at any other workplace” is basically a stance for the social life of stations (Bertolini, 2006).

#### 4.2. Continuous transportation part

The basic purpose of the transportation infrastructure, in both its theoretical and structure, is to move for new spaces for changing the parameters. Rather than to prefer to go outside or to stay in an enclosed volume, the transportation levels can choose to stay on their own places.

The continuous transportation is the type or an approach to make a reference of continuity and mobility (See Figure 5).

As Norberg-Schultz discussed as an artificial artifact; a station identifies, orients and connects for the society. “The theory of identification suggests

that identity consists rather in an interior organization of understood things, and that growing up therefore depends on being open to what surrounds us. We have to know where we are and how we are, to experience existence as meaningful” (Norberg-Schultz, 1985). In a manner of continuous transportation approach, these meanings of experience is important as they are the real space of people. The urban structure has become a world for “underground architecture” to commit services of daily routine. Respectively, these ongoing structures are the faces of urban surroundings. Their features of urban structures characterize the interaction of urban environment, urban identity as well as humans. In making a case for continuous forms, it is assumed that the tram goes through the lines and only stop when see the sign (Haapala, 1998).

#### 4.3. Public space

As cities were slowly starting to aware of the importance of the public spaces, the transportation parts of the cities are thought to be public squares when they touch the ground level. As considering the stations are part of urban development perspective, they are not only the transportation nodes but also the urban structures giving life to the public spaces. At this point Shannon & Smets’s prospect about infrastructure is important.

Chiefly, they see it like a public space and mark the structure like accessible place to almost everyone, and a common itinerary or a collective place. The fact that transportation infrastructure is thought to expand the public realm beyond the boundaries of a single space. Then it gets the

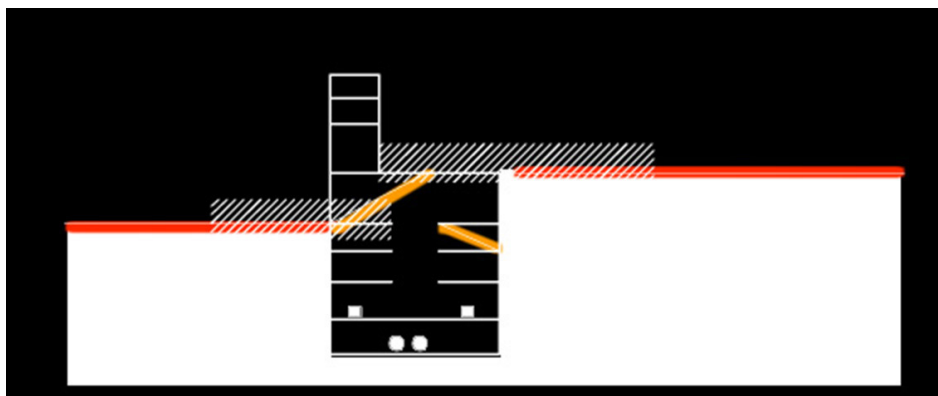


Figure 4. Principal section of the typology code 'stations as usual' (Yardim, 2012).

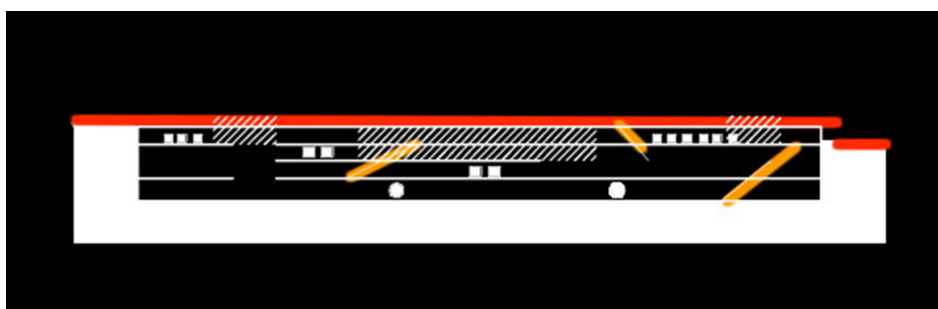


Figure 5. Principal section of the typology code 'continuous transportation part' (Yardim, 2012).

public space articulation by aspirations and dignity of contemporary society. Especially, the formation of infrastructure always potentially contains comprehensive urban Project (Shannon and Smeths, 2010).

In formulating infrastructure as a typology of public space, spatial forms and their offshoots could be thought. In this sense, unique visuals for immediate sensation on the ground is directly related with the public space quality and entrance design of the stations. Therefore, depending on a enclosure volumes and the outer skins in the ground will define the overall layout. They are the only places of connection between surface and underworld. Trancik stated that in cities of the past, the designs for streets, squares, parks and other spaces in public realm were integrated with the design of individual buildings (Trancik, 1986).

In the modern city each element is the responsibility of a different public or private organization, and the unity of the total environment is lost. Various development and urban-renewal, by and large, put together separately, without an overriding plan for public

space. The result is a patchwork quilt of private buildings and privately appropriated spaces (See Figure 6).

#### 4.4. Mega structures

The term mega structure largely means many functions of a city and defined by an architect Fumihiko Maki in 1964. He defined a mega structure as a large frame in which all the functions of a city or part of a city are housed. Moreover, the mega structure presented having great promises for infrastructure as public investment. Public structures are stimulated by substantial public investment can be made in infrastructures (Maki, 1964). It has the implementation made by technology calling 'human-made feature on landscape'. Today the replacement of mega structure by independent systems and their hierarchical levels are the same. It can called as a dynamic contact that the relation between constitutes of mega structure. In this sense, if there is a contextual and programmatic condition, systems can vary.

The intersection between mega structures and infrastructure trans-

portation seems a largely urban matter (See Figure 7). The approach for such a structure is a way to express all the layers of the city. It is inspired the mega structure can continue a pattern of increasing human activity within the city. The mega structure can modify in urban sections and plan medium. Even it appears as a structure, its integration with the context is one of the respectables it has. Banham, who used this term in 1976, declared that the mega structure to be understood as a framework of urban structure needs small units can be plugged-in. Under the sophisticated vision of mega structures, the sections mean intersection of functions, actions and modes of transportation respectively. These huge structures are called big transportation infrastructures.

Koolhaas discuss the mega-architecture and infrastructure of the city. He declares architecture is a medium that transforms by bigness then this accumulation generates a new kind of city. This bigness seem to be an urban and it competes with the city. At the same time bigness often represent the city. In this sense it looks like a city. "If urbanism generates potential and architecture exploits it, bigness enlists

the generosity of urbanism against the meanness of architecture" (Koolhaas, 1998).

#### 4.5. Hubs in network

Networks inevitably take the features of both global and local characteristics of the existing landscape. The place, the urban structure or defined as the hub in the network merged from two characteristics and a special arrangement for its own site in its network mapping. The hub inside the network brings out new activities and functions and enriches the place in more public level [16]. At the same time passengers are attracted by the hubs and the other staff that contribute the local economy. These infrastructural networks and the nodes of hubs are the idea of mixing local characteristics in other layers of the site. In addition, all modes of transportation can integrate the hub taking the idea of site forces (See Figure 8).

According to Lynch, the strategic spots are the nodes in teh city. They can be junction places of transportation modes over the paths like moments of shifting or they are concentrations as a street corner hangout or an enclosed square. Such a con-

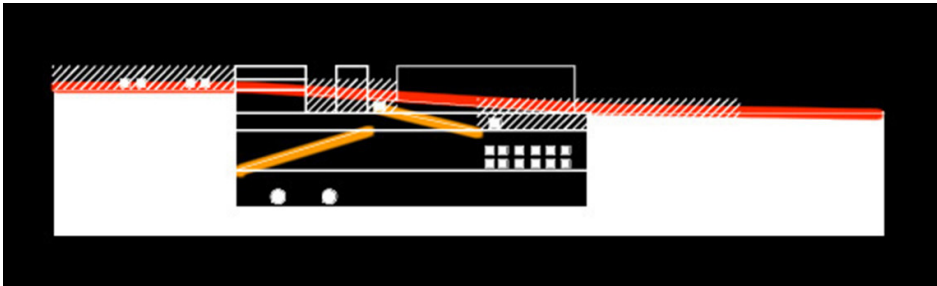


Figure 6. Principal section of the typology code 'public space' (Yardıı, 2012).

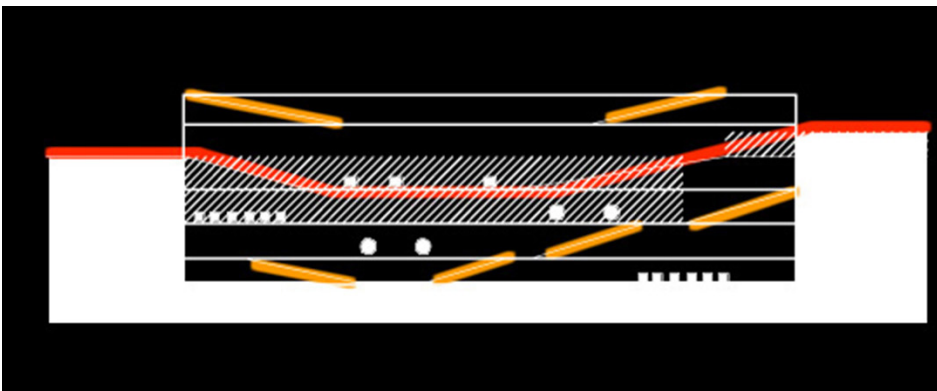


Figure 7. Principal section of the typology code 'megastructures' (Yardıı, 2012).



cept of node is related with the concept of paths and journey as well. Therefore, the polarizing centers of the places are typically named as cores are the variation of the nodes (Lynch, 1960).

#### 4.6. Through mixed-use spaces

Station points considered as a whole. Then, their relation revealed in their physical structure. It is itself a new typology connects and integrates the new spaces. These relations develop multi functions and vibrate environments so that they reduce lengthy tours in citizens' lives. Connecting with a mixed-use space is a realm which has to relate the society in order to be conceived and understood a specific space. Stations through mixed-use spaces have been a new interpretation of making multi functional decisions (See Figure 9).

When people moving by the transportation they want to stop and get into a space where they easily interact different modes of life cycles like shopping, eating, having a cultural performance and staying. This mass approach of citizens created a demand that transportation infrastructure shaping the

world of mixed-used architectural structures. The validity of such a typology is achieved if replacement of activities actualized properly. In allowing people come and pass in the space of multi function is an important part of the both vertical and horizontal sections of design schema. As Trancik referred while sunken plazas and internalized malls have been threatened like the traditional social function of the street by pushing effect of the verticality, mixing could have seen in the underground (Trancik, 1986).

#### 5. Transportation structure assessment and grounds in Istanbul

As the infrastructure has high value for the city's vision, the structures for transportation changes by the city's economical and social moves. Transportation cycle for the city is the characteristic definition of Istanbul today. The aspect emerges from significant attempts of Istanbul Metropolitan Municipality vision to explain and understand the city's potentials. This vision is entirely seems to be reflected with a quality of transportation modes, layers and urban grounds with the backing

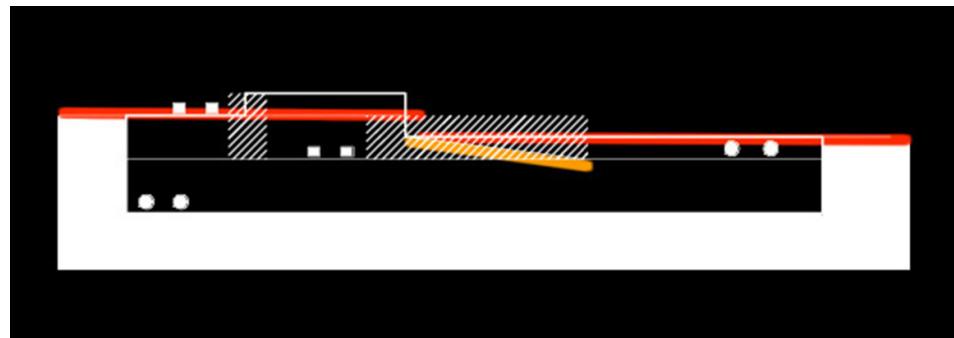


Figure 8. Principal section of the typology code 'hubs in network' (Yardımcı, 2012).

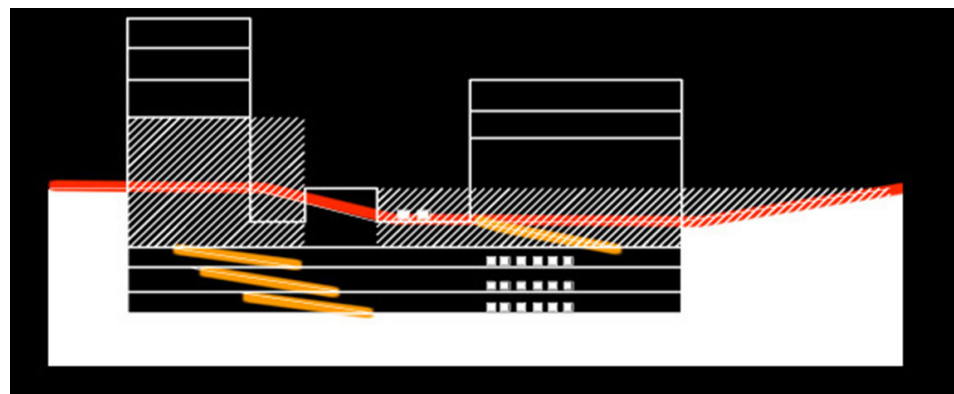


Figure 9. Principal section of the typology code 'through mixed-use spaces' (Yardımcı, 2012).

of population density in the city. In his book "Metabolism of Architecture", Kurukowa stated that the grounds of city like residence or working spaces change with respect to growth of population and its structure. He referred Le Corbusier that the cities are comprising of living, working and recreational spaces linking each other by transportation. Generally, the most important feature is daily-life spaces having multi functional concepts respectively (Kurukawa, 1977).

This complex structure of city emerges from a discourse which takes its reference from transportation assessment. In Istanbul, the laws of city are exactly like those mentioned above. The characteristics of Istanbul grounds in relation with the infrastructure is formed by social needs of the city itself. This environment of mixed-used functioning serves the spaces as an input. So that, the rational utilizing of transportation will enhance the quality of the public spaces and will have positive influence on the creation of more harmonious environments. The idea that transportation structures are placed with the public spaces is characterized by choice of event types. According to Tschumi, there is no architecture as soon as there is no event, program, action. Therefore, the public places are always affect the architecture of the transitional zones of the cities and their relations with the ground both in physically and logically. Together with the actions and events that take place in the social and political realm of architecture ground can be seen as the public space (Tschumi, 1996).

Istanbul is a city mixing all the location based contours of living and transporting in the one pot. As Cruz explained, city is the spatial configuration that comes into existence by complex systems of juxtaposed and overlaid elements that inter-affect and interact with each other (Cruz, 2011). The most compelling parts of this urban realm is creating boundaries. Geography, topography, pre-existing man-made conditions, regulatory frames, economic and political situations are modes that regulated in

perception in city. It is easier to follow Istanbul's transportation infrastructure looking through the juxtaposed layers. While public spaces have remained relatively static; new frequencies of transportation have aggravated the problems. The tension between transportation infrastructure and public spaces is most apparent at station points in Istanbul. The complex networks of subway system, ferries, taxis, freeway, trams, buses, trains have been implemented in the last years give pressure on new public spaces. The typologies of interaction aspect of transportation and ground can be seen in every network of Istanbul's transportation system. By exploring the potential relationships of transportation infrastructure and ground level, it is simple to imagine the urban sections respectively. In perception of Istanbul through urban sections is important. The aesthetic relationship between transportation and urban grounds has been poetically described by urban sections. They are having the quality of not only the layers of transportation but also the layers of history. Especially transportation demands make Istanbul's rapid growth more fast and historical context demands make revaluation of public spaces within modern urban structures. The changing metropolitan needs transportation that considered in context of historical development of layers and the necessity of pedestrian zones. Cities getting modern, economical factors getting better and prevails mobility. In the cities there exists people count in the day time three times more than the population. The population of Istanbul is 14 million then Istanbul's daily mobility is 24 million now, it will become 35 million in future. All the plans, network decisions are made according to these variables. Istanbul has this network decisions with a lot of modes of transportation. The factor is to make how is the integrated transportation is possible and breathing in transportation ([www.istanbul-ulasim.com.tr](http://www.istanbul-ulasim.com.tr)). Moreover, Istanbul Rail Network Map identifies the modes and the their superimposing relations. The network density seems logically developed all around city.

The analysis of different zones is composed of urban and architectural scale transportation projects in Istanbul. The common denominator of these projects is to deal with the transportation infrastructure and ground level typologies. These urban forms are generated with particular attributes of scale, space, and speed that are both specific and generic. The exciting thing about these urban structures is rather than being complex, they are public or utterly generic in Istanbul's network. They are everyday spaces because the masses of people sharing, experiencing and perceiving in them. Moreover their strategic locations and characteristics make the land more related with them in terms of scale and density.

The view of the cities have grown rapidly, always need solutions and suggestions in design perspective for the basic infrastructural transformations. Like in Istanbul, since local administrations are not financially autonomous, they are gazed upon searches for new resources to implement their decisions. The relations with the political states of the city have loyalty with the private and public sectors to develop projects on the city (Erder, 2009). As can be seen in Figure 10, "Zone Location Mapping" diagram introduced below, the cases for showing the relation between ground and

transportation in Istanbul have the major quality of being in the networks of city transportation system. Whether they have designed multi-functional or entirely for transportation purposes, these urban structures show the urban section quality as well. One of them is Yenikapı area and the other zone is the metro line of Haciosman - Şişhanane. The urban structures have become centers of attraction, when the increasing demands of qualified ground level getting higher. These zones analyzed in terms of leading factors and their properties of the programming that they have been transforming large-scale multi-used architectural forms.

## 6. Conclusions and recommendations

Imagine yourself putting together all your favourite memories in an unending and loosely

fitting jigsaw in such a way that you could always wander back through them, indulging and enjoying them at will. In such a way that they can be endlessly rearranged or juxtaposed. Ultimately, the effect becomes faintly exotic. The old favourites are tweaked by new playmates, the half-memories overlaid by more recent experiences. Strange new mixtures of fact and fantasy filter through. New-but perhaps only conjectured-memories

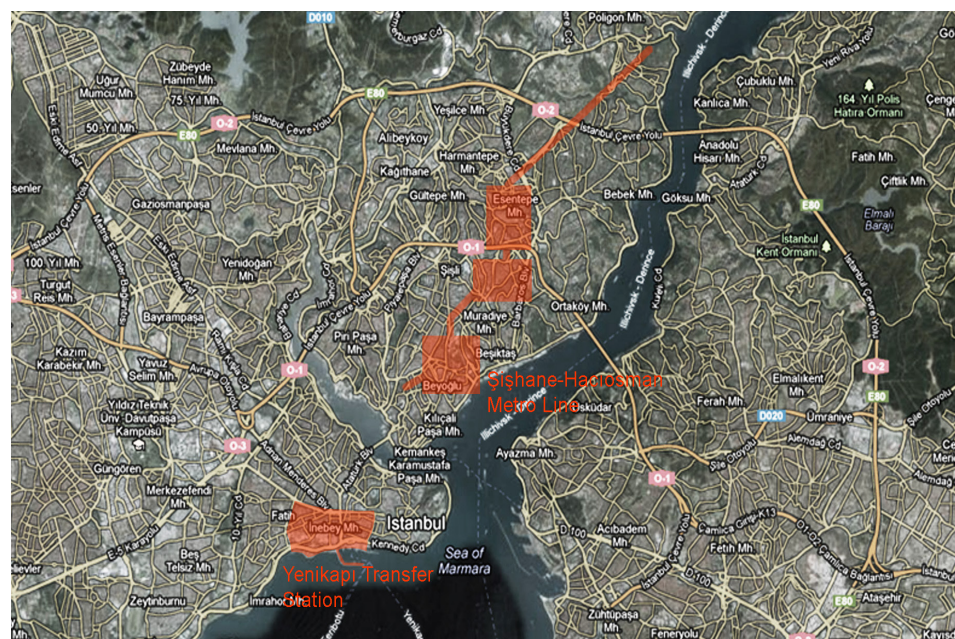


Figure 10. Zone location mapping.

emerge out of the scrambling process. Now imagine yourself starting to manipulate these memories and hybrid memories, starting to infiltrate the experienced with the could-be-experienced and, as the adrenaline surges, the might-be-experienced and even beyond: to the if-only-they-could-be-experienced (Cook, 2003):

Today, with the perhaps the exception of the highly complex modes of transportation in cities, their stations don't care much for the urban spaces. Transportation layers make use of existing spaces and occupy underground or ground level with only the entrances. Alternatively, the shopping mall entrances or mixed-use complexes can also a way to connect the ground with these urban structures. Such an attitude generally makes the interaction thinking in a box. It may seem paradoxical to mention architectural qualities of the transportation structures relation to urban design. However, the typological approaches for the underground levels and their consequences make the public real. According to Sennett, public realm is a materialized space (1996). It houses physical spaces such as square and street within an urban or rural environment. It is the spirit of the city. In fact, the desire to feel the all

structure is inherent in many types of stations. In some cases like Yenikapı, it experienced that the relation of below and above the ground makes the city, urban design and the landscape is much more accepted. The creation of the transportation infrastructure and the ground level interaction is going to be more analyzed and excogitated way.

A contemporary sense of the urban section assist by aligning the infrastructure in a way that underlines the spatial features for citizens. Besides all the typological approaches and the selected zones of İstanbul, the outcome is the mapping about the European part of İstanbul. It is named as 'typology mapping'. As seen in the Figure 11, this mapping examines the most qualified stations by the help of typological approaches that have been determined in the research. Transportation and regeneration projects has taken into consideration by means of connections and relationships are principally defined in that respect. Therefore, it is a way to see defined typologies in their design approaches. By doing so, their impact on İstanbul and effectiveness on their sites makes the perception of interacting of ground and transportation respectively.

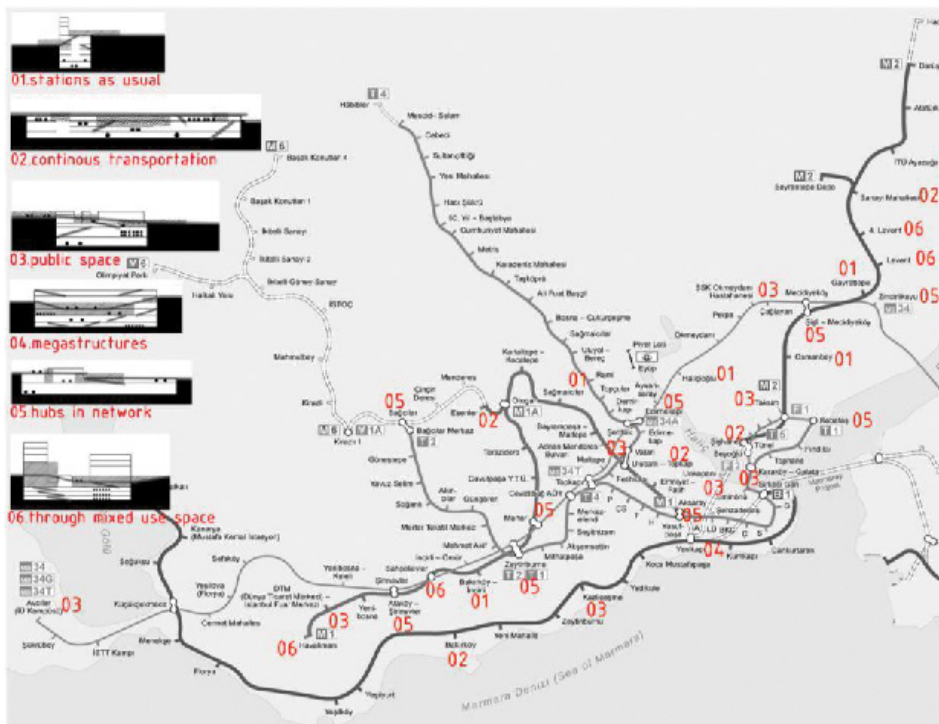


Figure 11. Istanbul typology mapping (Yardımcı, 2012).

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## Kentsel kesitler

Bu çalışmada, çok katmanlı ulaşım altyapısının kentsel tasarım ve mimari ile olan ilişkisi, kent zemininin bu durumdan nasıl etkilendiği kesitsel tipolojiler elde edilerek okunmaya çalışılmıştır. Bu incelemelerde kesit çizimleri üzerinden istenilen ilişkiler aranmıştır. Amaç, projelerin ulaşım ve fonksiyonel katmanlarının yanı sıra, onları oluşturan strüktürlerin de kentsel çevre ile olan etkileşimlerini hem dikey hem de yatay tutumları ile kesitler üzerin-

den okumaktır. Kentler yıllar geçtikçe büyürler ve değişirler. Kentlerin büyümesiyle, geleneksel şehirlerden metropollere doğru, ileriye tahmin eden değişimler olmaktadır. Artan nüfusla beraber, teknolojiler ve ulaşım araçları gelişerek 20. yüzyılın sosyal ve fiziksel koşullarını etkiler. Bu bağlamda, kentler gelişip değişime ihtiyaç duydukları sürece de ulaşım altyapısı yeniden biçimlenmek için evrilir. Bunun altında yatan sebep, kentlilerin hareket etme isteklerine cevap olarak çok

katmanlı ulaşım sistemlerine gereksinim duymalarıdır. Tüm bu gelişimler, günümüzde özellikle yer altı ulaşım sistemleri ile farklı seviyelerden oluşan ulaşım altyapısı algısının kentsel tasarım ve mimari ile birlikte yapılaşmakta olduğu bir yere gelmektedir. Bu bağlamda, yeraltı ulaşım modları kentin zeminini fazlaca etkilemektedir. Kentlerin bu dinamik halleri kentsel mekan ve ulaşım altyapısını birleştiren yeni haller aramaktadır. Bu noktada altyapı strüktürlerini zeminin farkında olarak yapmak, onlara bir kimlik kazandırmak suretiyle oluşturulan yaklaşım farklı bir yol olarak görülebilir. Bu durumda ele alınan problem, kentsel mekanların ve ulaşım sistemlerinin yer altı ve yerüstündeki uzantılarıyla nasıl bir etkileşim içinde olduklarını araştırmaktır. Ortaya çıkan farklı ilişkilerin hangi sebeplerden kaynaklandığını ve nasıl farklı tipoloji yaklaşımları ortaya çıkardığını anlamaktır.

Bu çalışma, zeminin ve ulaşım altyapısının ilişkisine odaklanmaktadır. Kentsel mekânların ve ulaşım sisteminin etkileşim seviyesi zemin üstü ve altına yayılmaları problem olarak ele alınmaktadır. Diğer taraftan, ulaşım bağlamının içindeki kentsel mekânlar, geleneksel merkezler ve bunların tipolojileri ile bu tipolojik yaklaşımların kent zeminini nasıl şekillendirdiği üzerine bir ilişki bulmaya odaklanmaktadır.

Araştırmanın temelinde yer alan hareketlilik kavramı; kamusal mekanların ve ulaşım yollarının yüksek standartlarda ilişki kurmasını ve geliştirilmelerini sağlar. Bu durum kentlinin de hızının artmasına neden olur. 21. yüzyılın yaşam biçimi bu hızın izlenimlerinden oluşmaktadır denilebilir. Kolaylaşan ve ekonomikleşen ulaşımın beraber bireylerin hareketlilikleri de artar, kentin sosyal ve çevresel halleri de bu durumdan etkilenir. Böylece, kent mekanlarının zemin altı ve üstü ile olan ilişkileri tasarım sürecini birbir etkilemeye başlar. Dış mekanlar ve girişler elemanlaşırlar. Kamusal mekan bu durumlara göre yeniden şekillenir. Özellikle kentin olaylıklarını zemin kelimesiyle tasvir ederken, zemin ve yer altı kelimeleri karşımıza çıkmaktadır. Bu çalışmada pratiğe dökülen ilk başlangıç noktası, katmanlı ulaşım alt-

yapıları ve onların mimari diyagramlarının analizleridir. Aynı durum, yeraltı mekânlarının biçimlenmeleri ve zemin seviyesi ile ilişkilendirilmeleri için de geçerlidir. Bu inceleme özellikle projelerin kesit çizimleri üzerinden yürütülmüştür. Amaç, projelerin ulaşım ve fonksiyonel katmanlarının yanı sıra, onları oluşturan strüktürlerin de kentsel çevre ile olan etkileşimlerini hem dikey hem de yatay tutumları ile kesitler üzerinden okumaktır. Bu süreçte belirlenen yöntemle incelenen örnek projeler kendilerine ulaşım modları, zemin perspektifi ve kentsel strüktür başlıklarının altında yer bulmaktadırlar. Aynı derecede önemli olan bir konuda, kent bağlamında, ulaşım strüktür tipoloji yaklaşımlarının zeminle kurdukları ilişki farklarıyla nasıl değiştiğini açıklayabilmektir. Tüm bunların yanında, bu tipolojilerin bir yaklaşım olarak literatürde yer bulabilmesi için bazı seçilmiş parametreler oluşturulmuştur. Bu parametreler, çalışma boyunca belli başlıklar altında incelenen örnek projelerin değerleri, felsefeleri ve kavramsal yaklaşım etkileşimleri üzerinden çıkarılmıştır. Aynı zamanda, yeraltı strüktürlerinin kentsel mekânlar ile olan birbirlerini etkileyici ilişkileriyle birlikte, araştırmanın değeri tüm bu yaklaşımların bütünleşmesinden gelmektedir.

Etkileşimlerin kentsel kesitlere etkisi de büyük olmaktadır. Bu bağlamda kesitler kentin kamusal spotlarının kavramsal önemini de ispatlamaktadır. Zemin seviyesinde ve ulaşımın oluşturulduğu ve devam ettiği alanlarda kentsel kesit kavramı hem düşey hem de yatay düzlemde anlaşılmaya çalışılmaktadır. Kesitlerin ulaşım kavramının en önemli anlatımlarından biri olduğu düşünülürse, günlük kentleşme örnekleri üzerinden çeşitli tanımlamalar yapılabilir. Tüm bu karşılaştırılan ve incelenen örneklerin kesite ilişkin varyasyonlarında yeni kentsel tipolojiler ortaya sunulmaktadır. Bunlar sadece fiziksel değil sosyal etkiler ve farklar olarak da okunmalıdır. Bu şekilde altı farklı "ulaşım ilişkili kent mekânı" olarak tipoloji yaklaşımlarına isim verilmiştir. 'olağan istasyonlar', 'devamlı ulaşım parçası', 'kamusal mekânlar', 'büyük strüktürler', 'ağlardaki düğüm noktaları' ve 'karma kullanımlı mekan-

lar boyunca alanlar’.

Tüm bu tipolojik yaklaşımlar, mevcut dokunun belirli bir süreç içine gelişmesiyle oluşmaktadır. Bağlamla başlayan bu devamlılık üzerine ölçek, form, mimari tasarım ve program parametrelerinin eklenmesiyle, öngörülen tipolojilerin gerçek aksiyon alanlarını belirler. İstanbul, literatür çalışmalarının ve tipolojik yaklaşım sürecinin üstüne örnek alanların seçildiği kent olarak çalışmada yer almaktadır. Kentsel kesitlerin yerüstü ve yeraltı ilişkiler ele alınarak tip değerlendirmeleri yapılmıştır. Gelişen İstanbul’un sosyal ihtiyaçları zeminlerin altyapı ile ilişki kurmasını desteklemiştir. Karma kullanımlı fonksiyonlaşma mekanların tasarımına bir girdi oluyorsa, rasyonel ulaşım sisteminin kalitesi de kamusal mekan oluşturarak artmaktadır. Ulaşım strüktürlerinin İstanbul’da kamusal alanlarla etkileşimli yerleşmesi kentin karakteristiği öne çıkarmaktadır. Bu bağlamda, farklı kentsel ve mimari ölçeklerde oluşan proje alanları İstanbul örneği içinde ele alınmıştır. Bu alanların ortak paydası ulaşım altyapısı ve zemin ilişkisinde oluşturdukları ilişki çeşitleridir. Seçilen bölgeler İstanbul’daki çok katmanlı ulaşım altyapısını ve zemin ilişkisinin kuvvetli olduğu ve kentin ulaşım ağında bulunan ana merkezler olarak seçilmiştir. Bu bölgeler çok fonksiyonlu bölgeler ya da tümüyle ulaşım amaçlı tasarlanmış olabildikleri halde her durumda da kentsel kesitlerinin farklı değerleri bulunmaktadır.

Çalışmada kentsel kesitler mekan-sal, ölçeksel ve hız bakımından jenerik olarak ele alınmaktadır. Bu duruma büyük ölçek ve kara kullanımlı alanların mimari olarak yorumlanması da denilebilir. Kentin çekim noktası olarak da kentsel strüktürlere sahip olan yada olacak olan bu alanlar Yenikapı bölgesi ve Hacıosman-Şişhane metro hattıdır. İki durumda da kenti etkilemesi beklenen strüktürler istenilen ve beklenen nitelikli zemin arayışla-

rının da cevaplarını bulmaya çalışmaktadırlar. Bu iki bölge, onlara öncülük eden faktörlerin ve içerdikleri öncelikli program elemanlarının etkisiyle büyük ölçekli ve karma kullanımlı mimari formlara dönüşmektedirler.

Genel çerçevede, zemin denilen aksiyon alanlarının özellikle yer altı ulaşım sistemleri ile ilişkisi sorgulanmaktadır. Bu durum İstanbul’un Avrupa yakasındaki yer altı ulaşım haritalamasına tipolojiler üzerinden bakılmasıyla yeni bir haritalama yaklaşımı oluşturmaktadır. Ulaşım altyapısının kendi strüktürünü yaratırken tek başına olmadığı, kentsel mekanların hem sosyal hem de fiziksel anlamda ve farklı ölçeklerde yapının bileşeni olduğu sonucu çıkarılabilir. Bunun yanı sıra, oluşturulan tipolojik yaklaşımlardan ve İstanbul’da örnek bölgelerinin incelenmesi sonucunda, gözleme dayalı bir ‘tipoloji haritalaması’ oluşturulmuştur. Bu şekilde İstanbul Avrupa yakasındaki genellikle yeraltı bazlı ulaşım sistemlerinin kentsel zeminler ile olan ilişkisi kentsel kesitlere verilen tipolojiler üzerinden okunabilmektedir.

Ulaşım ve yenileme projelerinin kentle ve birbirleriyle kurdukları bağlar ve ilişki yöntemleri bu şekilde bir parçada olsa tanımlanabilmektedir. Böylece, tipolojilerin tasarım yaklaşımlarında bir yöntem olarak ele alınması bir yol olarak ortaya çıkarılmış olur. İstanbul ve ulaşımın kent üzerindeki etkisinde ‘zemin’ kavramı önem kazanmaya başlar. Sonuç olarak çok katmanlı ulaşım altyapısının kentsel mekanda etkileri görülmektedir. Düşünölmüş mimari çözümler ve kentsel tasarımlar, yeraltı katmanlarını tipolojik olarak etkileyebilir ve kente hizmet etmelerini sağlayabilir. Gelecekte, özellikle Yenikapı örneğinde olduğu gibi, kentsel tasarım ve altyapı etkileşiminin çok daha iç içe geçeceği izlerini görmekteyiz. Zeminin farkındalığını arttırmak, ulaşım altyapısının kentsel mekanlar ve mimari dille ifadesi kentin kesitlerine bakarak mümkün olmaktadır.