

**ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF ARTS AND SOCIAL
SCIENCES**

**URBAN INTERIOR:
TAKSİM SQUARE AND CUMHURİYET STREET UNDERPASS**

M.A. THESIS

Sıla Burcu BAŞARIR

Department of Interior Architecture

International Master of Interior Architectural Design (IMIAD)

MAY 2015

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**KENTSEL İÇ MEKAN:
TAKSİM MEYDANI VE CUMHURİYET CADDESİ ALTGEÇİDİ**

YÜKSEK LİSANS TEZİ

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To my Family,

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ABBREVIATIONS

AKM	: Atatürk Culture Center (Atatürk Kültür Merkezi)
İBB	: İstanbul Metropolitan Municipality (İstanbul Büyükşehir Belediyesi)
NGO	: Non-Governmental Organization
TPP	: Taksim Pedestrianization Project
UKOME	: Transportation Coordination Center (Ulaşım Koordinasyon Merkezi)

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URBAN INTERIOR: TAKSİM SQUARE AND CUMHURİYET STREET UNDERPASS

SUMMARY

Interior architectural design is considered to be focusing on interior spaces in the built environment together with their atmosphere, spatial configuration, ergonomics and infrastructure. However, these interior spaces are thought to be in buildings; when it comes to an outdoor space or an urban environment, it is assumed that the design of that space is not in the scope of interior architectural design.

However, the high-tech constructions and fast developments of our age brought the interior architectural design discipline to a crucial place as it is concerned with space and its interrelation with human. The increasing population in urban environment brought the question of relation and interaction of these urban spaces' with humans into an undeniable importance. Thus, the interior architectural design approach which is dealing with human body and perception in space become a necessity for urban environment.

This thesis is relatively an experimental approach on the concept of interior space; focusing on the urban environment. Interior space is thought as a matter of scale and perception, rather than a matter of location. On this purpose, urban environment is studied in relation to human scale and perception, to see whether if it is possible to mention an interior space that can also be named as 'urban'.

It should be stated that this thesis' aim is to encourage interior designers to push he presumed interior space postulations. It is tried to avoid intervening other disciplines such as landscape architecture or urban planning, but to engorge interior design on them with an interdisciplinary method.

The thesis begins with a literature research on human scale with human body and its perception of environment; focusing on the sense of interior space in urban situations. Every chapter continues with figures that are chosen as examples.

The second part of the thesis explains the chosen site for conceptual urban interior project which is Taksim Square and the Cumhuriyet Street Underpass with its historical development and later through the perspective of the described urban interior space explained in previous chapters. Lastly, an urban interior conceptual design proposal has been made for Taksim Square and the Underpass using parametric design methodology in order to experiment on the theoretical background with an aim of connecting two separate urban spaces vertically with a spatial context and potential usage scenarios. The conceptual urban interior project involves a human-scale intervention to the ground surface of the Square and create perceptual connections while creating an urban landmark. In the design process, Rhinoceros Grasshopper plug-in is used as parametric design tool for the form finding in two dimensional plan scheme and the third dimension decisions are taken by designer with concerns about human body and its relation with the form in order to create an urban interior space atmosphere. Physical models in 1:500 scale are produced in order to understand the form and its light and shadow effects in real world.

In conclusion, it is stated that interior spatial design and its approach on environment can also make contributions on urban space by improving perceptual qualities of these spaces. Another contribution of the thesis is achieved with Taksim Square and Cumhuriyet Street Underpass urban interior conceptual project as it revealed that an interior architectural approach with its focus on human body and perception can bring different perspectives for urban environment and its spatial problems. It is also revealed that interdisciplinary thinking in architectural studies can widen the perspective of design in different scales drastically.

KENTSEL İÇ MEKAN: TAKSİM MEYDANI VE CUMHURİYET CADDESİ ALTGEÇİDİ

ÖZET

İç mimari tasarım disiplini üzerine yapılan teorik ve pratik çalışmalar, genellikle iç mekan tanımını varolan yapıların iç hacimlerini temel alarak oluşturagelmışlerdir. İç mekanların atmosferi, mekan içinde ve mekanlar arası kurgusu, ergonomik koşulları, altyapı çözümleri iç mimari tasarım denilince akla ilk gelen çalışma alanlarıdır. Söz konusu mekan varolan yapıların dışında, örneğin bir kent dokusunda yer aldığında, iç mimari tasarım yaklaşımının bu mekanla bir ilişkisi olmadığı varsayılır.

Fakat günümüz yüksek teknoloji ürünü yapıları ve hızlı gelişim, mekanların insanla olan ilişkileri üzerine çalışan iç mimari tasarım disiplinini önemli bir konuma taşımıştır. Kentsel çevrede yaşayan insanların oranının hızla artması, özellikle bu çevrenin insan ile kurduğu karşılıklı ilişki ve etkileşimlerin önemini yadsınamayacak derecede arttırmıştır. Böylece kentsel çevrede insan ölçeğinde, insan bedeni ve algısını ön plana alan ve birincil olarak bu etmenlerle ilgilenen iç mimari tasarım yaklaşımı gerekliliği meydana çıkmıştır.

Bu tez çalışması, kentsel çevreye odaklanarak iç mekan kavramına görece deneysel bir yaklaşım sunma çabasıdır. Tezde iç mekan tanımı yapılırken, bulunduğu lokasyondan çok, ölçek farklılıklarının ve algısal niteliklerin belirlediği bir mekansal sınırlama üzerinden açıklanmıştır. Bu amaçla, kentsel çevrede kişinin algıladığı mekansal etkenler insan bedeni üzerinden, ölçek ve duysal bileşenler bağlamında irdelenerek, bu çevrelerde 'kentsel' iç mekan olarak tanımlanabilecek mekansal oluşumların varlığı sorgulanmıştır.

Tez çalışması ile ilgili açıklanması gereken bir başka nokta ise, tezin amacının iç mimari tasarımcıları genel anlamda kabul gören iç mekan önkabullerini ve sınırlarını yeniden ele almaya ve bu önkabulleri zorlamaya teşvik etmektir. Şehir planlama ve peyzaj mimarlığı gibi kentsel çevre üzerine çalışmalar yapmak amacı ile kurulmuş disiplinlere müdahale etmekten kaçınılmaya çalışılırken, aksine bu disiplinlere iç

mimari tasarım disiplininin zenginleştirmek amacıyla disiplinler arası bir yöntem ile başvurulmuştur.

İlk bölümde, insan bedeninin mimari mekan tasarımındaki etkileri, insan bedeninin oranları ve ölçülerinin çeşitli mekansal yorumları incelenmiş, bu yorumlardan hareketle bedenın mekan tanımını üzerindeki rolü açıklanmış ve iç mekan özelinde yorumlanmıştır. İlerleyen başlıklarda, beden ve duyular üzerinden insanın mekansal algısı, bu algı türlerinin yarattığı mekansal sınır hissiyatı incelenmiş, iç mekan kavramı bu sınırlar üzerinden tartışılmıştır. Tüm bu tartışmalar, her başlık altında kentsel çevreden örnekler ve görsellerle pekiştirilmiştir.

Tezin ikinci bölümünde, ilk bölümde açıklanan kentsel iç mekan tanımını pratikte sorgulamak ve güçlendirmek amacı ile tasarlanan kentsel iç mekan konsept projesi için seçilen proje alanı olan Taksim Meydanı ve Cumhuriyet Caddesi Altgeçidi, tarihsel süreçleri ve yakın zamandaki kentsel dönüşümleri ile ele alınmıştır. Bu başlık altında Cumhuriyet Caddesi Altgeçidi'nin oluşumu ve son durumu, nedenleri ve sonuçları ile tartışılmıştır. Bölüm sonunda meydan ve altgeçidin mekansal problemleri ilk bölümde yapılan kentsel iç mekan tanımını üzerinden ele alınmıştır.

Tezin son aşamasında, Taksim Meydanı ve Cumhuriyet Caddesi Altgeçidi'ne ait iki kentsel alanı dikey düzlemde birbiri ile iç mekan ölçeğinde ilişkilendirecek ve bu iki büyük alanı kent dokusunda kullanıcılar için mekansal anlam ve potansiyel kullanım alanları oluşturacak bir kentsel iç mekan konsept projesi geliştirilmiştir. Geliştirilen proje, meydan ve altgeçit arasındaki zemin katmanına insan bedeni ölçeğinde yapılan bir müdahale ile mekanlar arasında algısal bağlantıların oluşmasını ve meydan ve altgeçit için kentsel bir simge oluşturulmasını amaçlamıştır. Projenin tasarım sürecinde yapılan analizler hesaplamalı tasarım yöntemlerinden de faydalanılarak form oluşumunda Rhinoceros Grasshopper eklentisi kullanılmış, plan şeması ağırlıklı olarak sayısal ortamda oluşturulmuştur. Üçüncü boyuttaki kararlar ise insan bedeni temel alınarak tanımlanan kentsel iç mekan hissiyatını oluşturacak şekilde tasarımcı tarafından alınmıştır. Tasarım sürecinde fiziksel modellerden de faydalanılarak, 1/500 ölçekte ele alınan üç boyutlu yazıcı ile üretilmiş maket, formun fiziksel dünyada nasıl bir karşılığı olacağı, özellikle ışık ve gölge ile ilişkisi gözlemlenmiştir.

Tez çalışmasının sonucunda, varolan iç mekan tanımlarına yeni bir bakış açısı ile 'kentsel iç mekan' kavramı beden ve algı üzerinden tanımlanarak eklenmiş,

disiplinler arası yaklaşımların mevcut disiplinler çalışmalara sağlayabilecekleri katkılar ortaya konmuştur. Tezin diğ er bir katkısı ise, kentsel dokuda yer alan Taksim Meydanı gibi  nemli bir alanın g n m zde i inde bulunduėu problematik duruma i  mimari tasarım yaklařımı ve hesaplamalı tasarım y ntemleri kullanılarak yeni bir  neri getirilmiř, bu baėlamda  rnek ve  zg n bir kentsel i  mekan projesi tez kapsamında ortaya konmuřtur.

1. INTRODUCTION

Interior architectural design is considered to be focusing on interior spaces in the built environment together with their atmosphere, spatial configuration, ergonomics and infrastructure. However, these interior spaces are thought to be in buildings; when it comes to an outdoor space or an urban environment, it is assumed that the design of that space is not in the scope of interior architectural design.

In the recent years, the traditional interior space definition is taken into discussions as design disciplines are getting more and more important in our high-tech age. Also cities' situation and urban life is another contemporary issue as Attiwill (2011: 11) states: *'... for the first time in history the proportion of people living in cities is higher than those living in rural areas... The question of habitation - how to live in a city-becomes critical as life fills the streets.'* Also she describes the practice of interior design as *'a practice which addresses the relation between people and surroundings to produce interiors which perform different functions such as living, working, playing, selling, exhibiting and so on'* (Attiwill, 2011: 13). These two statements reveals that if daily life of populations in urban areas moved towards streets and urban environment, interior architectural design is a necessary discipline in order to design these areas for people in human scale.

This thesis is relatively an experimental approach on the concept of interior space; focusing on the urban environment. Interior space is thought as a matter of scale, rather than a matter of location. On this purpose, urban environment is studied in relation to human scale and perception, to see whether if it is possible to mention an interior space that can also be named as 'urban'.

It should be stated that this thesis' aim is to encourage interior designers to push he preassumed interior space postulations. It is tried to avoid intervening other disciplines such as landscape architecture or urban planning, but to engorge interior design on them with an interdisciplinary method.

The thesis begins with a literature research on human scale with human body and its perception of environment; focusing on the sense of interior space. Every chapter continues with figures that are chosen as examples. The second part of the thesis explains Taksim Square and the Cumhuriyet Street Underpass with its historical development and later through the perspective of the described urban interior space explained in previous chapters. Lastly, an urban interior conceptual design proposal has been made for Taksim Square and the Underpass in order to experiment on the theoretical background.

2. THE CONCEPT OF URBAN INTERIOR: HUMAN BODY, URBAN MORPHOLOGIES AND URBAN PERCEPTION

Urban spaces are generally known as open spaces defined by the surrounding buildings or areas with accessibility of all the people living in that city. Unlike private spaces such as residences or institutive buildings, these places are where interactions happen between relatively foreign people. Therefore, they are public; every present individual- regardless who they are- share these spaces with each other. As Hoşkara (2014) defines, the most significant urban spaces in the urban structure are streets and squares - which define 'public spaces' as they are common spaces. In this thesis, the terms 'urban space' and 'urban interior' are under the definition of public spaces; thus, the property rights of focused spaces are accepted as public areas.

When we talk about a city; we envision buildings, roads and landscape. However, the difference between a city and a town or a village is basically the people. Cities have considerably high population in contrast to a town; resulting the way its citizens dwell define the city image. According to Lynch (1960), the active elements; especially the people that populate the city and their activities are as crucial, as the fixed physical parts of a city. We are not only the audience of this scenery; also an actor on the stage, a part of the spectacle with the others. If we think about a well-known street in Istanbul such as Istiklal, it is impossible to visualize it without the crowd passing through; window-shopping people, street musicians and their spectators, stands selling variety of goods and the nostalgic tram passing while ringing its bell. This may be a proper example that a city cannot be thought without its participants.

In this chapter, the aim is to find out whether there are urban spaces that show interior space characteristics in cities. Thus, the perception of space becomes an important issue. For this reason, urban forms such as streets and their relationships with the buildings, underpasses, pedestrian passages or cornices that cover building entrances etc. are taken into account, to examine their interiority potentials within an

anthropocentric perspective. Another approach is focusing on environmental phenomenologies in a city; such as sound, daylight, wind or smell. Movement in time should also be taken into account in the search of urban interiors.

2.1 Perception of Urban Interior According to Urban Morphologies

Urban forms consist of big variety of landscape elements from roads and buildings to trees, fountains and others. They create a whole city image, a background for people experiencing the city. They are being used to build an urban environment that is fulfilling the needs of habitants. While revealing an aesthetic urban view, they also create a definition of space by dividing, connecting, merging or emphasizing parts of the city. It is also possible to assume that these spatial configurations may also define concrete or sensorial boundaries that create 'interior' spaces and in some situations, their scale can be felt just like any interior space in a building.

Interior space has many definitions. As a beginning, they are defined by a sensation of cover, as the interior needs distinguishing borders (either concrete and/or sensorial) from exterior space; such as interiors of buildings. They are also the primary space that we can perceive directly with our body. The volume they define is in human scale, thus, everything in an interior space can be perceived by a direct exposure. If we try to define an interior space in urban environment with urban forms; the scale of examined spaces should also be close to the human scale. For this reason, the body dimensions and their relation with the space is being included, as it is crucial for the research of interior space in urban environment.

2.1.1 Perception of human body, its dimensions and their role on defining urban interiors

When architecture and space is the subject, human body has been studied for its proportions, abilities and limits through examining and experimenting. Space cannot be thought apart from the human and that is the very reason the human body and its idiosyncrasy are substantial. It has been used as a model for spatial dimensions for ages. Artists and architects used the human body as a tool in their design process. They have made sketches and diagrams to explain and interpret its measurements.

In this chapter, the human body interpretations through architecture and art history are being an example and inspiration for the subject matter. These examples are

followed by relatively recent experiments about the relation between body and space made with different tools and medias such as photography and sculpture. Chapter is concluded with diagrams that are interpretations of human body and space in order to find out an urban interior definition.

2.1.1.1 Prominent human body interpretations for spatial thinking

The most renowned scrutinizing body drawings are from Da Vinci. His famous drawing 'Vitruvian Man' dated 1490 was a study on body and proportion which almost indicates a summary of Renaissance (URL-1) (Figure 2.1).

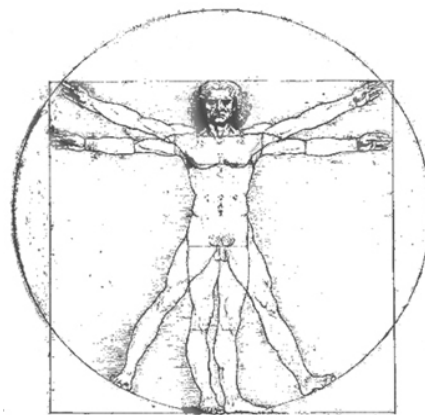


Figure 2.1 : The Vitruvian Man, Leonardo da Vinci (URL-1).

This drawing is a study of a perfect man body image and its formal relation with the geometrical concepts of perfection: square and circle. It also reveals a definition of space that is limited by boundaries of the furthest area the man can reach. The space described by the circle and square has the closest inner surface to the central body which is the smallest volume that a man can feel with his sense of touch. Human body proportions were the ultimate acceptance as formal measurements for the architectural orders at that time; they even have been used as a template for plan and section drawings (Figure 2.2). Historically a culture's particular building tradition often came with inherent balance. Holl, Pallasmaa and Perez-Gomez (1994; 116) give an example from traditional Japanese building dimensions based on the *tatami*, a surface mat that brings a room plan setting in a house as two, three, four, eight, twelve, fourteen, etc. mat rooms, making up all proportional relations of room sizes according to the 3' x 6' human-scaled tatami.

Drawings above are the examples for the influence of human body proportions on spatial decisions. The body was the indicative notion for space by being a tool like a ruler. Throughout the time, this understanding and interpretation of body have undergone significant conversions. The idea of the body as a model of formal measurement was replaced by the idea of the body as a system of perception. This led to the conviction that architectural forms should be concordant with the laws of the senses rather than the proportions of the body (Palumbo, 2000).

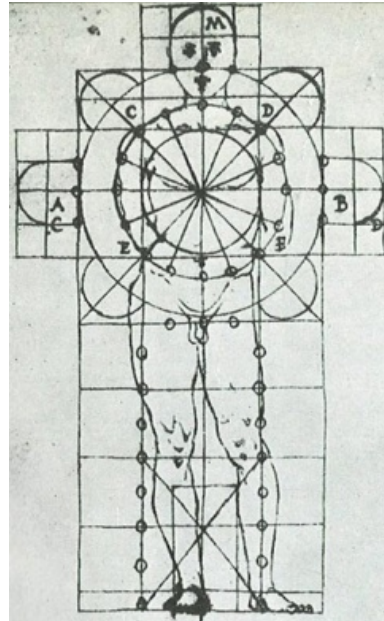


Figure 2.2 : Drawing by Francesco di Giorgio inscribing the human body into a basilica plan (URL-2).

Analysis on human body and space interaction advanced with the attempts of extending the body through expanding the central body figure in the space that it is located. This new approach to body and space can be seen in Oskar Schlemmer's work in Bauhaus. In the introduction of 'The Theater of the Bauhaus', Walter Gropius (1961) describes Schlemmer and his approach on space as '*... it is apparent that he experienced space not only through mere vision but with the whole body, with the sense of touch of the dancer and the actor. My own great impression of Schlemmer's stage work was to see and experience his magic of transforming dancers and actors into moving architecture*'. In the following pages of the same book, Schlemmer (1961; 21) himself reveals his opinions about space, human figure and their influences on each other with his essay '*Man and Art Figure*'. He explains the form and color as materials of an artist and they may be with different dimensions as a plane or a three dimensional space, which are rigid and tangible

forms as they are abstractions (Figure 2.3). The intangible ones are created by light with its space-creating effect (Figure 2.4).

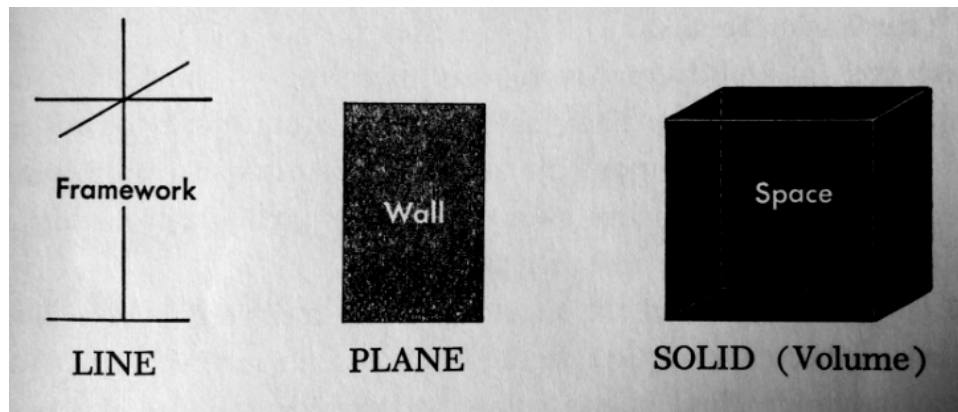


Figure 2.3 : Tangible 'abstract' forms as materials for artists (Gropius, 1961).

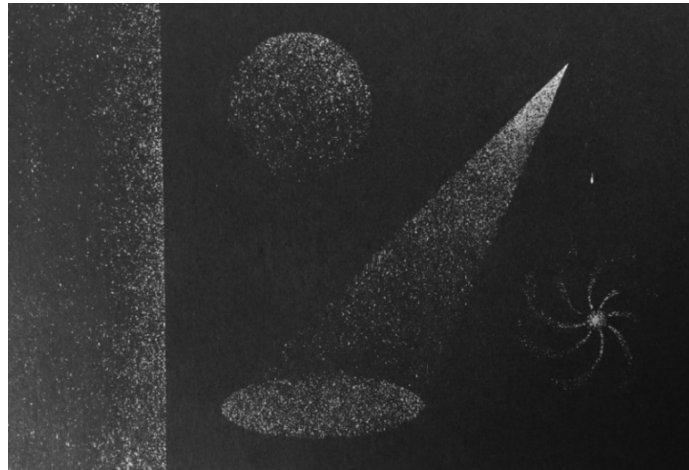


Figure 2.4 : Light and its effect as an intangible form (Gropius, 1961).

Following the abstract definition of space, he continues with the human body and its placement in this space and depicts the confrontation of the abstract space and natural man with a space-body diagram (Figure 2.5).

This drawing reveals the change of the perception on human body and its relation with the space around it. Here, body is defining the space with its location and correlations with the surrounding. It hasn't been observed as a model of dimensions, instead, this drawing display how the body is not something fixed, but potentially active all around himself. It is possible to observe Schlemmer's body image and its dynamism in the space with following images in his essay. In his drawings, the figure is in a motion full of vitality within its organs and limbs, thus, unlike the

abstract rigid space, the interaction between body and space has been represented with arcs and round shapes (Figure 2.6).

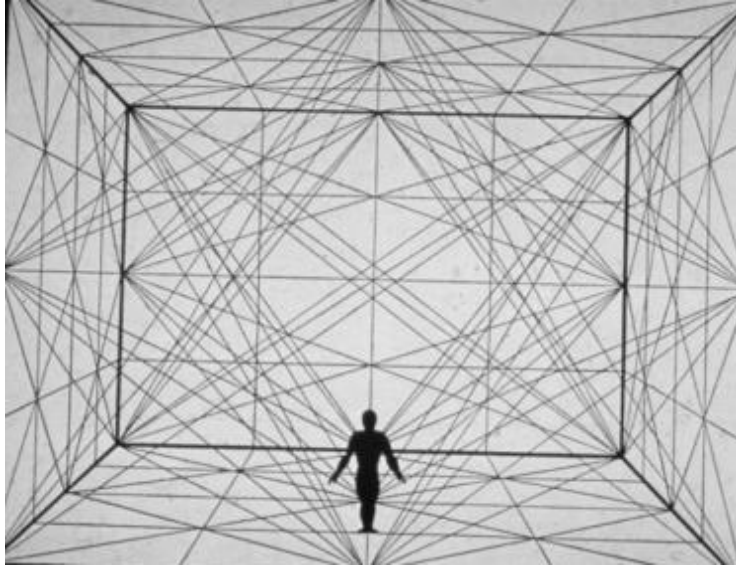


Figure 2.5 : Schlemmer's '*Man and Art Figure*' (URL-3).

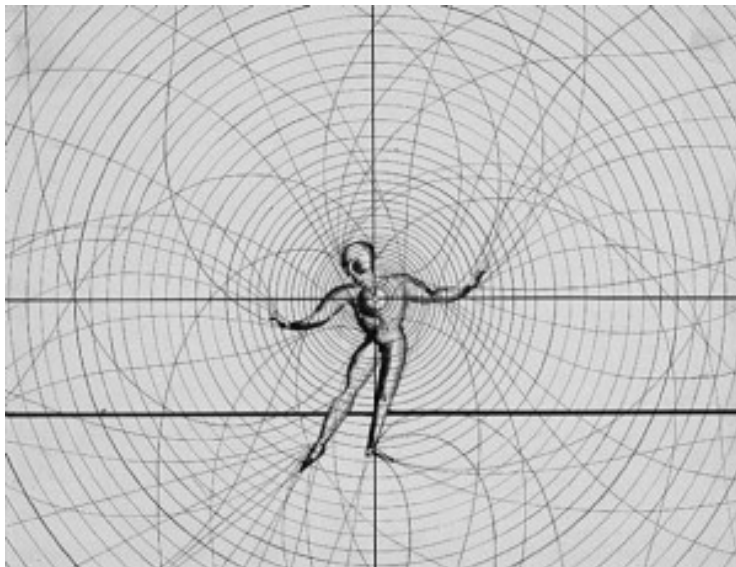


Figure 2.6 : Human with his movements and emanations that create an imaginary space (Gropius, 1961).

Schlemmer formed his work on human body and space through stage costumes as he portrayed costumes as the most convenient tools to articulate the affections of the body. His costume designs are spatial visualization of the body and the potential volume that it can pervade (Figure 2.7).

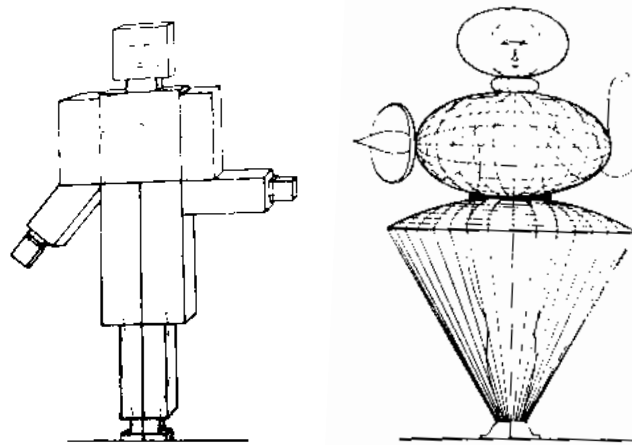


Figure 2.7 : Two costumes designed according to the human body and the space they define (Gropius, 1961).

The costume drawings above are the descriptions of space with the body and its motion designed by Schlemmer. On left, the body parts are interpreted as geometric cubical volumes and shapes that are occupations of the limbs in the space which Schlemmer called as '*ambulant architecture*'. On right, the costume is called as '*a technical organism*' revealing the space defined by the motions of the central body figure (Gropius, 1961; 26, 27). These human-shaped geometries can be seen as the abstraction of the most adjacent interior spaces of the human body.

When we talk about the human body, its proportions and their use for spatial design, Le Corbusier is one of the pioneers that we should consider substantially. In his famous book '*The Modulor*' published in 1948, he developed a scale system for architectural proportion decisions based on a human figure with a raised hand. Le Corbusier (1948) describes the Modulor as an anthropocentric scale system that is framed with golden section and Fibonacci series. His search for a regulation was emanating firstly from an admiration of the aesthetic explanation beginning with Vitruvius and his golden section as well as Da Vinci and Alberti's convenance to this tradition (URL-4). The latter was basically his need for standardization of construction methods, as he was fascinated with technological developments and the idea of using mass-production techniques in architecture. In this manner, he develops a deeply rational and mathematical scale system for architectural elements, as he criticizes metric scale being incompatible with human body dimensions whom

humans are the inhabitant of designed spaces. Le Corbusier's '*Modulor Man*' drawing is the diagram explaining his human-oriented scale system tooling for his aesthetic regulation concerns (Figure 2.8).

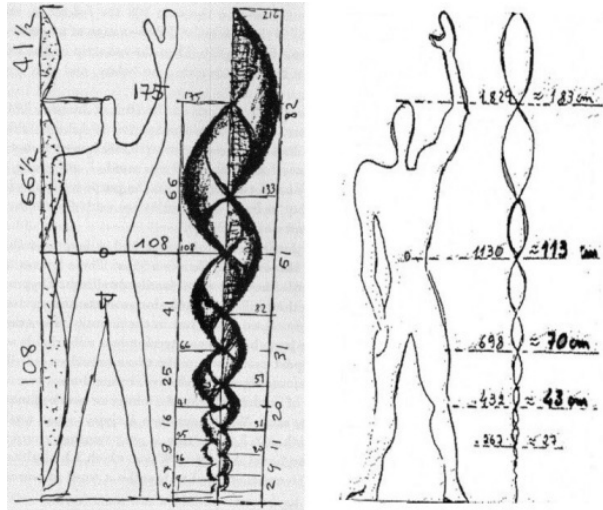


Figure 2.8 : The '*Modulor Man*' drawing by Le Corbusier, 1948 (URL-4).

According to Palumbo (2000; 22), this highly logical and traditional perception of human body as a static and firm image to produce a scale system for spatial decisions and explanations is a final endeavor to break the new understanding of the human body-space relation which is organic, dynamic and mutually acquainted. Indeed, space and human are interconnected not only in formal aspects. Location of the body and its activities in space are also determinant for spatial morphologies as much as the mind and how it perceives the environment that surrounds its physical shell; the body.

2.1.1.2 Perception of body in space and time through art

Technological developments in visualizing motion and time within a single frame helped to widen the perspective of spatial perception through human body and its movement. Photography techniques like 'cronophotography' made it possible to capture human body in movement through time. These images revealed that with an existence of a human body, space is not acting stable; on the contrary the volume contained by space is dramatically altering together with the definition of space.

Eadweard Muybridge's works and inventions on motion and photography in 1800's were pioneering techniques for early motion picture camera and animation. His work 'The Horse in Motion' had also been an inspiration to French scientist and cronophotographer Étienne-Jules Marey who recorded the first series of live action photos with a single camera by the method called '*chronophotography*' (Figure 2.9) (URL-5).

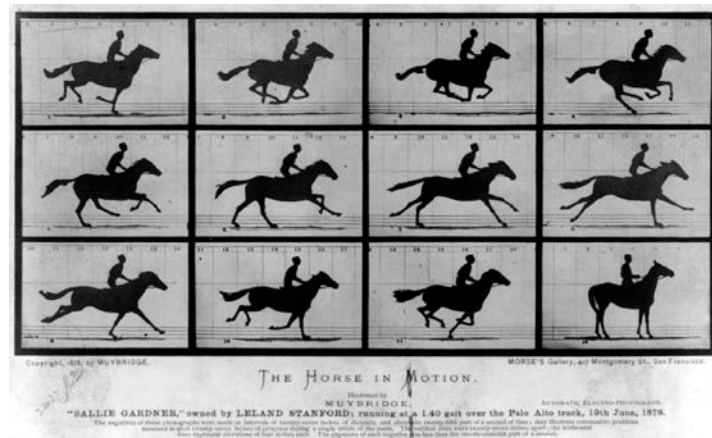


Figure 2.9 : '*The Horse in Motion*' by Muybridge, 1878 (URL-5).

Marey's invention of '*photographic gun*' has made it possible to superimpose sequential frames all together on one picture; revealing the nature of motion in space within a single glance (URL-6). He was so influenced with the outcomes of his experiments; he aspired to see the motion and its spatial characteristic with a three dimensional output. For this purpose, he made sculptures and models based on them with cast and bronze (Figure 2.10) (URL-7).

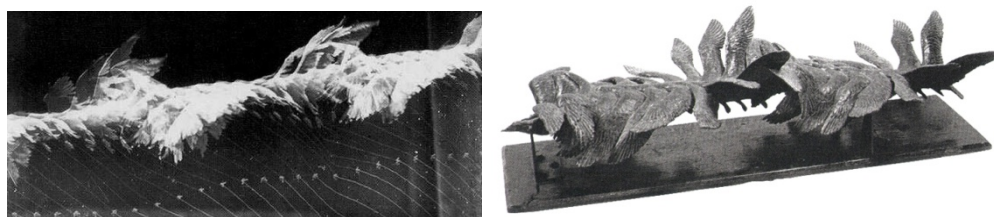


Figure 2.10 : Marey's chronophotography work captured the flight of a gull, 1887 (URL-7).

In the recent years, artists have been working on human body and its movement in space using different mediums. One of these salient artists is Katie Grinnan, who had an exhibition in the Hammer Museum in Los Angeles in the year 2013. Grinnan's sculpture '*Mirage*' (Figure 2.11), which is made of casting multiple molds of her own

body, reveals the human body and the visual and physiological experiences of it through its motion in space (URL-8).



Figure 2.11 : Grinnan's 'Mirage' , 2011 (URL-8).

Human body and space are interconnected through body and its physiologic and psychological perception about its environment. These body interpretations show some examples of these phenomena through technology and art. They raise the question whether we can use these interpretations in the exploration of urban interiors.

2.1.1.3 Defining urban interior through an anthropocentric perspective

Shirazi (2014: 13) explains environmental perception and its relation with our body as follows: *'We can sense both our 'physical body', for example, in the action of gravity while falling downstairs, and our animated 'living body', for example, when we move ourselves towards the door. In other words, our body has a special kind of corporeality, a lived-bodiliness, which makes us an actor in the world, and thus our perception is a lived, experienced perception'*. This explanation shows that while we exist in a space, that space is defined according to our perception of environment and thus, through our own body. When we consider the human body as a point of origin in the process of experiencing and explaining our environment, the scale and atmosphere of the spaces become definitive. In the preface of an interior design theory anthology called *'Toward a New Interior'*, the articles and their common topics are explained by a circular diagram with the scope of *'body and perception'* being placed in the center (Figure 2.12) (Weinthal, 2011). This diagram also gives us

some clues about changes in perception about being in an interior space according to the dimensions of the space.

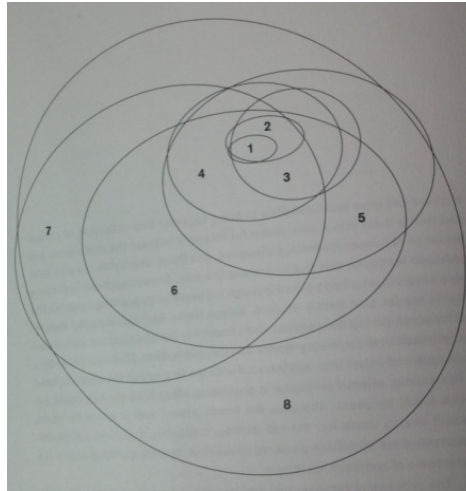


Figure 2.12 : Weinthal's diagram (2011: 10).

The numbers for each layer represents: 1: Body and Perception, 2: Clothing and Identity, 3: Furniture and Objects, 4: Color and Surfaces, 5: Mapping the Interior, 6: Private Chambers, 7: Public Performance and 8: Bridging the Interior and Exterior. Each layer is defined according to the writer's methodological approach on the interior design theory under that title; however, this diagram also reveals a gradual scalar relation between the intersected layers. The perception of space beginning with body and clothes (the initial spatial covering that the body experiences) continues through interior space components such as furniture and surfaces. The diagram's last and widest layer is concerned with a relation between interior and exterior; which also contains all the other layers while having the furthest defining limits of a circular space around the body. One can use this diagram as a convenient tool to be an example for an explanatory diagram of body and its relation with spaces in different scales (Figure 2.13).

The diagram has eight layers distinctly separated from each other and the body. The layers are representing the body and the spatial elements around him with an alignment according to body's initial exposure to that element and also the scale factor of each space. The layers are: 1: Body, 2: Apparels, 3: Utensils and Furnishing, 4: Interior Space and Inner Surfaces, 5: Buildings and Architectural Configurations, 6: Landscape Elements, 7: Urban Entities, 8: Natural and Environmental Entities.

However, the diagram doesn't involve the interactions between the human and space around him. Also, spaces have effects on each other. Thus, the layers have to be 'permeable', allowing transactions (Figure 2.14).

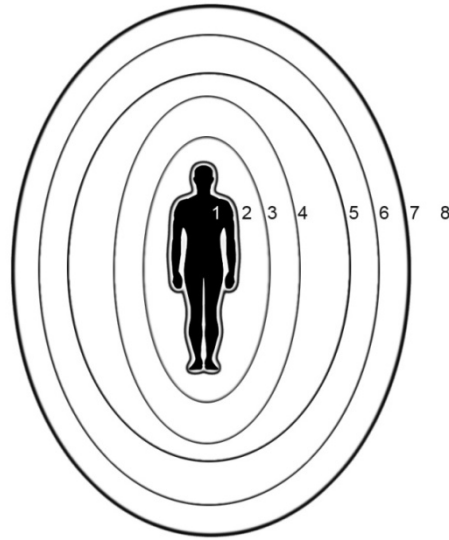


Figure 2.13 : The body-centered spatial perception diagram.

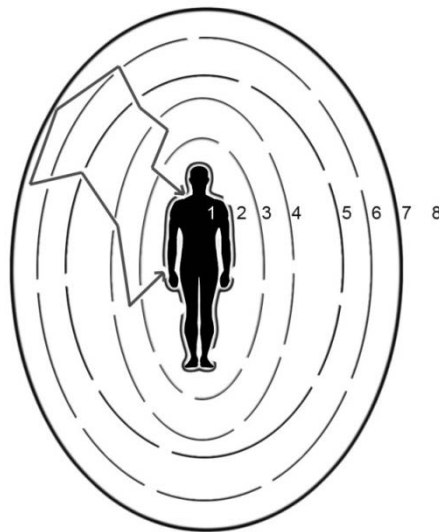


Figure 2.14 : The body-centered spatial perception diagram and its permeable condition.

In this diagram, the layers' boundaries are dashed, having the interconnected effect between the human and spaces. As an example, our clothes are affected by the weather conditions; we decide what to wear according to the climatic changes in our environment. Also, even we are in an interior space, our spatial configurations are the conclusions of the architectural planning, which is also affected by urban entities. Finally, all our actions have environmental consequences that are reflected by our

widest spatial layer (Natural and Environmental Entities) which we have to adapt ourselves and our habitat; spaces.

These diagrams show how interior spaces and interior design methodologies are also concerned with other built environments in different scales. Also, we can assume that interior space is a perception of space, not defined by if it is in a building or not, but a space that has closer contact with wherever the human body it is located, in relation to wider spatial perceptions as architectural or urban environment. In this aspect, it is not a matter of location; it is a matter of scale. This perspective allows us to estimate that some morphological features in an urban environment reveals interior characteristics according to its interaction with human body and its proportions which we can call 'urban interiors'.

2.1.2 Urban morphologies in human scale and their interior space characteristics

Since we focus on the human body proportions and its relation with the space around itself, the interiors we seek in an urban area are taken into account from pedestrian viewpoint. Common interior space descriptions involve some vertical and horizontal elements as boundaries like walls and dividers, doors as entrances and ceilings for shelter . There are urban spaces also containing these interior spatial elements' characteristics. Even they are in 'exterior' spaces between buildings which we call urban space, they are also perceived like interior spaces from pedestrian's perspective.

White (1999) describes some urban space qualities several times by defining them as 'urban rooms' in his book *'Path, Portal, Place'*. For him: *'Plazas and gardens offer opportunities to sit, be and enjoy. They have a clear feeling of place, of definition and character. They are urban rooms that embrace us with a grateful generosity'* (White, 1999: 11).

Here, the 'room' may be used in both literally and metaphorically as a volume or an enclosed chamber in a building. In another sentence, he refers to urban texture as the 'house': *'In compact urban fabrics where contiguous facades shape coherent pathways and places, we occasionally hear the metaphor "city as house" used to*

describe the environment. The streets are hallways, plazas are rooms and building facades are interior walls' (White, 1999: 24).

In the following pages, his study on urban public spaces from the pedestrian perspective continues by classifying urban spaces into paths, portals and places according to their morphological aspects and human behaviors contained by them. White also talks about 'hybrid' spaces that may have more than one characteristics. He explains his opinions through section and diagram sketches, which are also revealing how he approaches the urban space through pedestrian dimensions. These sketches are used as a layout for the search of interior urban spaces (Figure 2.15).

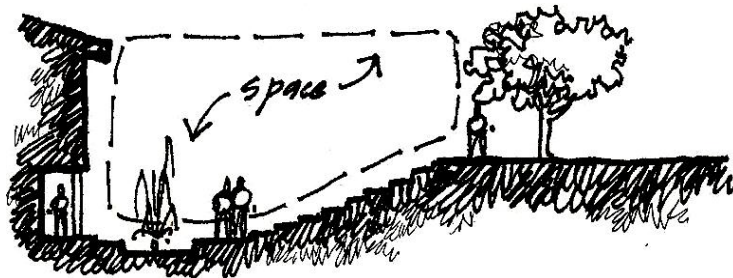


Figure 2.15 : A section sketch from White (1999: 41).

With another sketch from the same book, building masses are emphasized with solid geometries, remarking the urban space as voids in between with an exaggerated dimension next to the human proportions while giving the impression of interior space in an urban section (Figure 2.16).

If we observe our environment in an urban space through human body dimensions, even changes in the pavement patterns describe a sense of interior space. Likewise, other urban entities describe planes that are creating a sense of interior space. Diagrams and images representing urban interiors may be explanatory for the urban interior description of this chapter.

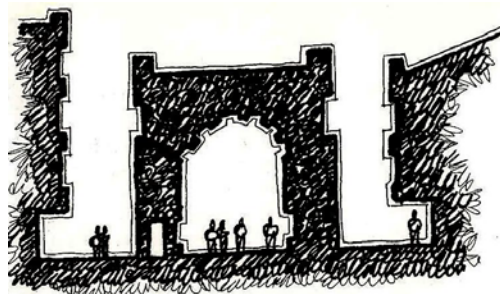


Figure 2.16 : An urban section sketch (White, 1999: 70).

Interior spaces in an urban scene describe '*containers*'. White (1999: 29) explains '*containers*' as they are spatial volumes that, the air that is enclosed by the boundary elements that define the limits of space. In this sense, the aim of this chapter is to define these volumes with their boundaries in urban area.

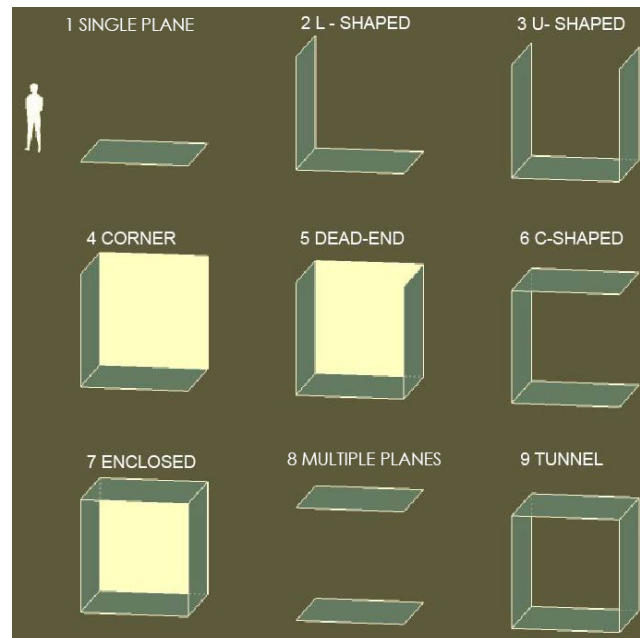


Figure 2.17 : Urban interior '*containers*'.

As it can be seen in the Figure 2.17, container typologies are divided to nine categories, according to the placement of sensorial boundary planes. These container types can be observed in urban spaces with examples and their interpretations.

Single Plane: The first typology is the '*single plane*' container. They can be seen as floor patterns or material differences on the ground plane. Pedestrian passes on the streets, defined areas for smokers or texture differences like stone tiling on grass are some examples from urban spaces. These are giving a sense of spatial diversity with their tangible and intangible boundaries (Figure 2.18).



Figure 2.18 : Pedestrian Passage as Single Plane container example. (URL-9).

L-Shaped: Second urban interior typology is *L-shaped* container with two planes giving a sense of boundary to pedestrians in human dimension space. These L-shaped containers can be observed mostly on one side of the wide streets. Pedestrians experience the planes as ground plane and a facade of a building, wall, billboard or such urban planes that are creating physical borders. These planes also involve interactions with the pedestrians, in some cases they are window displays, open shopping stands, information boards etc. Seaside pedestrian paths are one of the most suitable examples for L-shaped urban interiors (Figure 2.19).



Figure 2.19 : L shape urban interior container example from İzmir,Turkey(URL-10).

U-Shaped: Third typology is *U-Shaped* containers, that give the sense of interior space by three planes; one on the ground and two on opposite sides. This kind of an enclosure sensation is experienced generally on narrow streets just like corridors in urban area. The bordering planes can have different specialties morphologically or material wise, only if they are in human dimensions, close to the human body scale (Figure 2.20).



Figure 2.20 : U-Shaped urban interior from Mardin.

Corner: *Corners* are located where building facades or other planes define vertical boundaries crossing each other with the ground plane. These corners should be in human scale in order to give an interior space impression. They can be seen in urban areas that are more historical as the buildings are closer to each other for a corner formation. In historical European cities like Italy commonly involve small squares called 'piazza', which can have the corner type urban interior (Figure 2.21).



Figure 2.21 : A corner from Italy, gives an urban interior impression (URL-11).

Dead-End: *Dead-End* type of urban interiors share similarities with corners, however they consist of three vertical surface planes that surrounds and defines urban interior volume. They can be seen simply at the dead-end streets, narrow enough to give the impression of interiority. People may use these areas for different purposes such as street bazaars or exterior cafe lounges (Figure 2.22). Even people can decide to use these places coincidentally without any specific function such as resting for short period of time or spending outdoor time free of charge.



Figure 2.22 : Cafe Ara located in Beyoğlu, İstanbul (URL-12).

C-Shaped: This type of urban interiors are comprised of a horizontal plane creating a canopy over the ground, suspended with a vertical element which also gives the sense of a boundary. Most common *C-shaped* urban interiors are existing under a canopy system on façades of buildings. Other examples can be seen under buildings with exedras or arcades at the ground level of the buildings. Again, a form close to the human dimensions is essential for an interior impression (Figures 2.23, 2.24 and 2.25).

Enclosed: *Enclosed* urban interiors are one of the most profound spatial typologies for the sense of interiority with the 'tunnel' type urban container. Enclosed urban interiors involve almost all surface planes to create a conventional interior space just as in a building, however they are located in the urban environment. Different examples for typical enclosed urban interiors are bus-stop or train stations, payphone booths, ATM booths and urban elevators (Figures 2.26, 2.27 and 2.28).



Figure 2.23 : Canopy system from New Lynn (URL-13).



Figure 2.24 : XX Settembre arcades in Genova, Italy (URL-14).



Figure 2.25 : Galata Bridge in Istanbul (URL-15).



Figure 2.26 : ATM cabinet in urban area (URL-16).



Figure 2.27 : A bus station with an interpretation of a house with advertorial purposes (URL-17).



Figure 2.28 : the payphone cabinets of London (URL-18).

Multiple Planes: This type of urban interiors consist of a parallel plane above the ground plane, suspended with a vertical structure that doesn't have any boundary plane characteristics; similar to an umbrella. They can create large interior spaces with a regular repetition, while some others can be self-standing. Station canopies can be an example for a multiple planes type urban interior and temporal or permanent district bazaars are another example for wide urban interiors with repetition (Figure 2.29 and 2.30). Even public gardens can give a feeling of interiority due to the coverage of tree branches and leaves.



Figure 2.29 : Metropol Parasol by J. MEYER H. Architects in Seville, Spain (URL-19).



Figure 2.30 : The permanent Fish Bazaar canopy by GAD in Beşiktaş, İstanbul (URL-20).

Tunnels: *Tunnels* are commonly underground or ground passages, bazaars or special urban forms such as 'abbara's in Mardin, Turkey (Figures 2.31 and 2.32). They create an interior space with four plane surfaces parallel to each other. This type of containers are the second most profound space typologies for the sense of interiority in an urban environment. Also narrow streets covered with plantation or canopies create an urban interior with a tunnel formation.



Figure 2.31 : Underground pedestrian passage in Eminönü, İstanbul (URL-21).



Figure 2.32 : The 'abbara': street passages in Mardin, Turkey (URL-22).

Tunnel morphology and the defining boundary walls of the tunnel are studied with a relative point of view by Claude Laurent with his conceptual drawings of '*Function of Oblique*'. In his work, tunnels and walls are tilted in order to make experiercer to feel the gravity and the existence of these spaces. His sketches with tunnels are also related with the idea of urban interior as they are defined by human body and its dimensions (Figure 2.33) (URL-23).

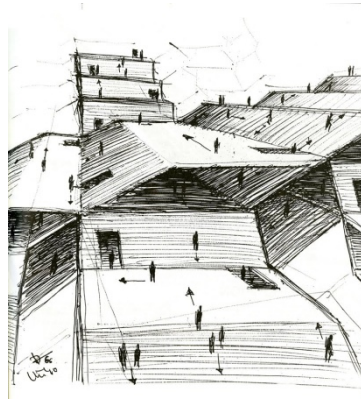


Figure 2.33 : Claude Laurent, '*Function of the Oblique*' (URL-23).

2.2 Perception of Urban Interior through Urban Sensations

The body is our interface with the world around us. Stimuli that our body perceive are within a direct exposure to the phenomena which are defining spatial characteristics. Thus, our body is also the one who perceives its environment. The human is a corporeal phenomenon that is living, perceiving and comprehending. This reveals that the relation between human and his environment (architecture) is a coalescence that is not only visual, but also sensual through the body.

In recent years, the importance of humane environmental design with sensual perceptions have found its importance again in the design fields, which was thought as a less-crucial aspect of architecture and built environment after the modernist period's pragmatcal perspective. Grange (1985: 83) states that '*just as our bodies have come to feel the sterility of Bauhaus architecture and reject its lack of tactile depth, so our bodies have come to feel the phoniness of green-belt planning schemes. ... The human body, in the final analysis, cannot lie. Perception is our conscience*'. The intangible qualities in architecture had been recognized as subjective and unpredictable, consequently our environment gradually turned into a space

configuration without the sense of 'place'¹ and 'being'². Hesselgren (1967: 14) clarifies the importance of subjective phenomena as follows: *'According to psychological terminology, 'subjective' refers to phenomena appertaining to mental life, while 'objective' refers to phenomena occurring in the physical environment. In this sense, subjective phenomena can be just as real and generally valid as objective phenomena. Perceptions are every bit as real as their stimuli: for us human beings they may even be more real...'* Pallasmaa (2005: 16-49) explains this as a feeling of 'alienation', the consequence of lacking 'peripheral vision'; which is unconsciously turning the ocular perceptions into bodily experiences. Peripheral visions connect us with space while focused perception draws us outwards, turning us into spectators only. According to Pallasmaa (2005), the problem arises by isolating the eye from other sensorial perceptions and simplifying the environmental experience only with visual peripheral limits. Steven Holl (1994: 41) describes the difference of sensorial perception in architecture, as being more fully than other art forms that engages the immediacy of our sensory perceptions. The passage of time; light, shadow and transparency; color phenomena, texture, material and detail all participate in the complete experience of architecture, unlike two dimensional photography, painting or graphic arts and unlike the limits of aural space in music.

Although perceptions are influenced by personal and social experiences from past, there are common experiences that all humans share despite of their personal background or cultural aspects. Gibson (1979) called them as '*affordance*'; that is what our environment 'offers' us with its substances. The basic affordances of the environment are perceivable directly without an excessive amount of information; they are in a sense objective, real and physical unlike values and meanings. These type of human environment 'affordances' are our subject as we are concerned with the sense of being inside of a space.

Lang (1985: 202) quotes an example from the well-known phenomenologist Maurice Merleau-Ponty's *'The Structure of Behavior'* (1963) about a soccer player and the football field:

1. Sense of Place: The particular experience of a person in a particular setting. Feeling stimulated, excited, joyous, expansive, and so forth (Steele, Fritz. 1981).

2. Sense of Being: The moment that one feel his existence and its outcomes in his environment.

'The soccer player is not a distant consciousness surveying the field as an object of thought; the field is given as 'the immanent term of his practical intentions', and the vectors of force in it are constantly restructuring with his actions during the game 'the player becomes one with play and feels the direction of the goal...as immediately as the vertical and horizontal planes of his body'. The player understands where the goal is in a way which is lived rather than known. The mind does not inhabit the playing field but the field is inhabited by a 'knowing' body'.

The urban interior explained in this thesis is mainly perceived by this kind of bodily knowing and experiencing of the interior environment. Phenomenology quoted from Smith (2007) described by Husserl is the study of the essence of consciousness as lived - is centrally concerned with structures of intentionality: in perception, imagination, judgment, emotion, evaluation, volition, consciousness of time and space, experience of other people, and so on. So phenomenology is largely focused on how perception, thought, emotion, and action are directed toward things in the world, how things are 'intended' in these forms of experience, and thus the meaning of things have for us in different forms of experience (Shirazi, 2014: 11) . Our sensations that we use to perceive our environment are as visual, auditorial, olfactory, gustative and tactile. These are tools for us to understand the surrounding world and our being in it. Our distance to the phenomena we perceive is important at this point as these tools can work effectively with an order. Lawson (2001: 110) describes this order as being in a 'Russian matryoshka doll' with Figure 2.34.

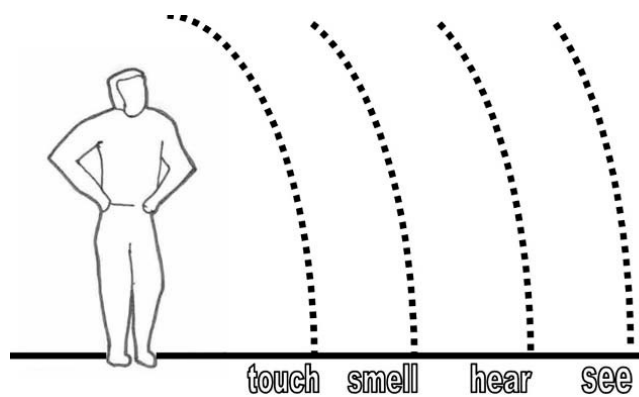


Figure 2.34 : The senses work in a series of nested bubbles rather like 'Russian matryoshka dolls' (Lawson, 2001: 110).

In this chapter, these senses are studied separately to clarify their functions and processes in our perceptions about environment. Also, it is acknowledged that as Hesselgren (1967: 125) mentions: *'methodological study of the senses is impossible, however, unless these are distinguished from one another, even though the*

distinction may be artificial'. Holl, Pallasmaa and Perez-Gomez (1994: 45) give an example of this artificiality:

'When we sit at a desk in a room by a window, the distant view, light from the window, floor material, wood of the desk, and eraser in hand begin to merge perceptually. This overlap of foreground, middle ground, and distant view is a critical issue in the creation of architectural space...Though we can disassemble these elements and study them individually during the design process, they merge in the final condition, and ultimately we cannot readily break perception into a simple collection of geometries, activities and sensations'.

Visual Sensation: In his book *'The Language of Architecture'*, Hesselgren (1967: 114, 115) explains visual perception under detailed titles about how we sense the visual phenomena and the different visual stimulations such as visual form, color, light and illumination and so on. He makes examples for visual illusions and the change of perceptions according to the sense of distance, size and perspective, then ends up with the 'total visual perception' which is a synthesis of form, color and texture. Holl, Pallasmaa and Perez-Gomez (1994: 63) state the importance of light and shadow in architectural and urban space as natural light, with its ethereal variety of change, fundamentally orchestrating the intensities of architecture and cities. What the eyes see and the senses feel in questions to architecture are formed according to conditions of light and shadow. There is also another enriching factor of light, as it can reflect and manifest itself in different visions and on different surfaces. This feature of light brings a crucial potential on the richness of visual perception. As it is mentioned by Holl, Pallasmaa and Perez-Gomez (1994: 80):

'at times colors and contours in the reflection of flowers or autumn trees in a clear still pond, seem more intense than the actual view. A flat plate of glass in a window along an urban street reflects the background with an amazingly sharp image. On the bottom of a pool we can often see intense focal lines of sunlight projected by the crests of wavelets acting as lenses. This psychological power of reflections overcomes the "science" of refraction'.

Auditorial Sensation: Auditorial sensations inform us about our environment and its context through sound. For humans with a normal sensual development, hearing isn't considered as important as seeing in order to perceive the space and our location in it; however, there are examples that auditory senses play a huge role in giving a meaning to our visual perception and environment. Pallasmaa (2005: 62) gives the example of silent movies and the necessity of overacting in order to give the expressions and feelings that are unable to reach because of the soundlessness.

Musical terms are also often used to describe architectural configurations. 'Architecture is frozen music' is a commonly quoted phrase from Goethe (*Die Baukunst ist eine erstarrte Musik*) (URL-24). Hesselgren (1967: 136, 137) explains auditory phenomena through defining the sound, noise and speech with some physical aspects such as echo, reverberation and acoustics, however he also acknowledges that phenomenological approach is a necessity when the subject is to make an analogy between architecture and music: *'Neither in music nor in architecture can we 'explain' what is experienced by describing the physical properties of the stimulus.'* In *'Dwelling, Place and Environment'*, Schafer (1985: 87-98) mentions how soundscape and auditory senses are crucial for the perception of space in his essay *'Acoustic Space'*. It is known that some animals use auditorial skills to process and comprehend the spatial information around themselves. In the case of oceanic dolphins, the inner ear has been modified to allow for the perception of high-frequency sounds which is vital for the dolphin's echolocation sense, because it allows the dolphin to detect very small objects and moreover, recent research suggests that these echoes may preserve the spatial structure or shape of the reflecting object and be interpreted by higher center of the dolphin's brain as an *image* of the object (URL-25). This specialty can also be seen in human societies. Schafer (1985: 87-95) quoting from Carpenter, mentions auditory space as follows:

'Auditory space has no favoured focus. It's a sphere without fixed boundaries, space made by the thing itself, not space containing a thing. It is not pictorial space, boxed-in, but dynamic, always in flux, creating its own dimensions moment by moment. It has no fixed boundaries; it is indifferent to background. The eye focuses, pinpoints, abstracts, locating each object in physical space, against a background; the ear, however, favours sound from any direction...I know of no example of an Eskimo describing space primarily in visual terms...(Eskimos) have no formal units of spatial measurement.'

A game for mobile devices with Android or IOS (iPhone operating system) can be an example for auditorial perception of space which is called *'Dark Echo'*. Released in 2015, Dark Echo is developed in the RAC7 Games by Ennis J. and Ringrose J and as they describe in their press release, the game is about being trapped in darkness and one must use sound to guide his/her way through threatening environments. The game environment 'sounds' like a labyrinth and while user walks through; footsteps are echoing from the interior surfaces. Gamer can see the plan scheme of the space by white straight lines reaching out from sources of sound into the space and reverberate through borders. Different types of borders are resembled with different

colored lines as red lines are for dangerous spaces or blue lines represent water or wet surfaces (Figure 2.35).

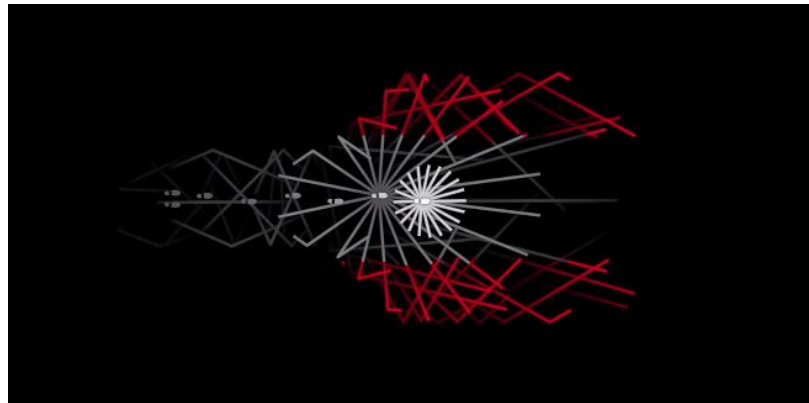


Figure 2.35 : A scene from the 'Dark Echo' (URL-26).

It is also stated by Hesselgren (1967: 139) that 'sound has a dimension of depth and we can speak of an *auditory* perception of space. Hill (1985: 100) states that '*those individuals born totally blind may serve as invaluable aids in the investigation of the non-visual ties to the environment because their experience affords a vantage point otherwise obscured by the despotism of the eyes*'. Blind people are mostly dependent on their auditorial skills to develop their sense of space and location, using a stick as a tool to create sound and interpret its echoes. This way, they are wandering in an auditory space. Pallasmaa (2005: 64) explains this phenomena by stating that the sound measures the space and makes the scale of the space comprehensible: '*We caress the boundaries of space with our ears*'. Sound can define spatial characteristic which cannot be seen. One of the main impact we experience when we arrive at a crowded city is the noise surrounding us which is much more vivid and louder than suburban areas. Schafer (1985: 89, 90) also gives examples from religious sounds that are indicating the belief of a society and civilization, even when the religious place is not in visual horizon: '*...when Martin Luther wrote that every European was born into Christendom, he was merely endorsing a circumstance that was in his time unavoidable. Those who could hear the bells were in the parish; those who could not were in the wilderness*'. He also states that, aside from the area inhabited at the moment, spatial apprehension by non-literate peoples everywhere is vague, for everything over the hill or beyond the forest is hidden; here, '*sound becomes light, making the hidden visible*' (Schafer, 1985: 95). Hill (1985: 102) narrates a visually handicapped person's way of perceiving a staircase: '*It is difficult to explain. You can*

feel that the railing is coming up. You know where you are in relationship to stairs. You can tell where you are. You can tell. You can just really tell by hearing'.

Pallasmaa mentions auditorial sensations' importance in an urban environment. He states that every city has an echo related with its street structure, scale and common architectural language with materiality (2005: 64). We can sense this soundscape while moving through different urban regions: historical centers that are not allowed for vehicle traffic sounds quieter and more tranquil than a border of a highroad. A fish market expresses itself with sounds of fishermen yelling to the customers while seagulls screaming near the sea. Pallasmaa (2005: 63) also mentions that at night people comprehend the city while noise is lower and they can hear their neighbors and trains or ambulances passing by. However, there are some negative aspects in urban area that inhibit our auditorial senses to perceive spatial phenomena such as noise pollution. Blind people are more aware of this phenomena due to the fact that their auditory skills are much more developed. They even sense small differences in aural perception when they are in an open place, which is a wide area or when the weather is windy that it prevents them to understand directions of sound sources (Hill, 1985: 103). Pallasmaa (2005: 64) criticizes the fact that conventional architecture is ignoring this auditory quality of spaces. For him, wide open spaces in modern cities lack of echoes and today's interiors are emitting the sound and bowdlerize the total spatial experience.

Olfactory Sensation: Smell is the most intimate phenomena before tactile sensations and it is often overlooked in environmental design processes except unpleasant odor control systems like in sanitary rooms and kitchens. However it is exceptionally influential on our spatial perception as the most persistent memory of a place is the scent of it. Pallasmaa (2005: 67) refers to Bachelard emphasizing memory and imagery are interrelated while explaining how scent induces us to a completely forgotten visual memory of a place; our nose awakens a bygone image and we enter to a vivid daydream. Although the influence of olfactive sensation on our spatial perception is not a common field of study, the analysis on systematization of scent types have been made by German psychologist Hans Henning in his book '*Smell*' (*Der Geruch*) in 1915. His classification called '*Henning's Prism*' of odors is according to six primary odors: *fragrant* (like lavender or rose petals), *ethereal* (like ether or cleaning fluid), *resinous* (like resin or turpentine), *spicy* (like cinnamon or

nutmeg), *putrid* (like faeces or rotten eggs), and *burnt* (like tar oil), the first four being closely related and depicted as the vertices of one face of a prism (Figure 2.36) (URL-27).

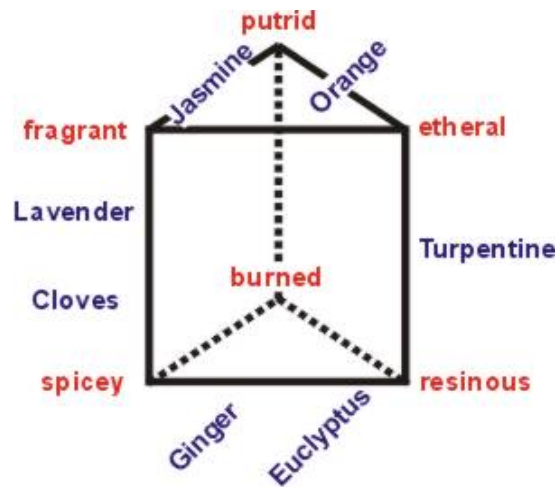


Figure 2.36 : Henning's Prism; also called the Odor Prism or Smell Prism (URL-27).

Hill (1985: 104) gives an example from a blind person's use of olfactive sensations to find out about her environment: *'Laura, for example, mentioned the use of odors emanating from the grocery store, doughnut shop, shoe store, and nut shop as a means for locating them...locating a stairs may be done by hearing, by feeling, or even by smelling the freshness of the air from the door to which the stairs may lead'*. These examples also remind how cave researchers find their way to the surface by using their olfactive skills in the dark and omnidirectional environment of cave interiors. On the other hand, scent is not a phenomena that is useful only when we can't perceive our environment with our visual senses; Pallasmaa (2005: 68) mentions about how odors enriching our spatial experience in urban space as follows: *'What a pleasure to pass from a scent realm to the other in narrow streets of an old town! The odor space of a candy shop takes us back to the naivety and curiosity of our childhood...the scent of a bakery reflects the images of health, well-being and physical strength...the special pleasure of travelling is to meet with the geography and microcosm of scents and flavors.'*

A Turkish bank used scent phenomena and its importance on environmental experience in their 2013 miles credit card advertorials with a slogan *'you can see, hear, but not savor the smells without travelling'* with images that are triggering the

desire to travel (Figure 2.37). This video gives the essentiality of scents and their relation with our perception of space characteristics.



Figure 2.37 : A sequence from İş Bankası 2013 Maximiles credit card advertorial (URL-28).

Tactile Sensation: This type of sensation is considered as the most intimate stimuli to the human as gustative sensation also involves tactility. Tactile perception of space reminds the hand and fingers as primary tactual body parts. To touch and grasp, one needs to be in a direct physical contact with the phenomena or the source of it. However, sense of touch is such a high responsive feeling that even if some other layers like gloves or shoes are worn, they can't block the tactile perception completely. Hesselgren (1967: 118) investigates tactile sensation under detailed classifications as tactile surface sensation, haptic perception of form and kinesthetic experiences. Tactile surface sensation is important to understand surface qualities such as smooth-rough, hard-soft, elastic-plastic and other attributes like temperature, pressure and vibration. We can even give them a scale and differentiate the divergence of intensity. This type of sensation is mainly perceived by our fingers. However, it doesn't need to be with a direct contact. As Hesselgren (1967: 122) quotes from Katz, *'When sewing, our perception seems to be situated in the point of the needle'*. Feet are underestimated for tactile sensation of the environment but they are also as sensitive as our hands. We can perceive the material of the ground surface even through our shoes. Hesselgren (1967: 123) again emphasizes its importance in architectural design decisions: *'This is of great practical importance as the architect often has to choose between a flooring that is easy to clean and hygienic, but unpleasantly hard, and one that is less hygienic but more pleasant from a tactile point of view'*. Holl, Pallasmaa and Perez-Gomez (1994: 91) criticizes contemporary architecture's negation for haptic sensation as follows:

'Today the industrial and commercial forces at work on the "products" for architecture tend toward the synthetic; wooden casement windows are delivered with weatherproof plastic vinyl coverings, metals are "anodized" or coated with a synthetic outer finish, tiles are glazed with colored synthetic coatings, stone is simulated as is wood grain. The sense of touch is dulled or canceled with these commercial industrial methods, as is the texture and essence of material and detail displaced.' and they underline the importance of haptic realm of spaces with a metaphor: *'The total perception of architectural spaces depends as much on the material and detail of the haptic realm as the taste of a meal depends on the flavors of authentic ingredients. As one can imagine being condemned to eating only artificially flavored foods - so in architecture the specter of artificially constituted surroundings imposes itself.'*

Again, people who have problems with their visual sensation are ironically have a great advantage as they are advanced in tactile sensation. *'The blind, whose other senses are more highly trained in compensation for their loss of sight, can see changes in the grain of a pavement with their sticks. Vibration is usually a 'near' sense, but here it may be referred to as a 'distant' sense'* (Hessलगren, 1967: 121). The sense of vibration also is helpful for deaf people as vibration is also related with the sense of hearing. We sense sound waves through the vibrations of the tiny bones in our inner ear and similarly, people who suffer from deafness can also sense the sound through vibrations of the surfaces in some particular instruments, enabling them to feel the music (or auditorial quality of the environment) through tactility (Figure 2.38).



Figure 2.38 : Children touch the back of an instrument as the orchestra plays. (URL-29).

Tactile sensation of the fingers is also handled in the user- friendly touch-screen cell-phones. The feeling of vibration give the confirming feeling to the user, while he is typing on the uniform glass surface.

Temperature is also another matter of tactility, as Hesselgren (1967: 124) mentions *'phenomenologically, sensations similar to the experience of temperature as a near sense occur, and we can feel whether an object radiates heat or cold'*. An example for the sensation of temperature can be given from dwellings with heating stoves. Usually in this type of dwellings, only living room is being heated constantly in winter times as it is difficult to use stoves in every room at the same time. Living room becomes a space of warmth, coziness and sincerity as the household have to live most of the time in that small volume close to each other. Stove and its sense of warmth is an archetype of home and family. As Pallasmaa (2005: 73) quotes from Marcel Proust describing perception of a space near fire: *'Seems like an immaterial exedra, a warm cave was carved in the room, a hot air zone with fluxional boundaries'*. This can be clearly observed when homeless people gather around a fire



Figure 2.39 : an urban interior filled with heat from fire barrel (URL-30).

barrel trying to get warm. The warmth zone of the fire immediately creates a relatively comfortable urban interior for impoverished (Figure 2.39).

Gustatory Sensation: Gustatory sensations are thought as not so relevant with architecture and environmental design; however as it is mentioned, there is a transmission between sensations and the stimuli they are affected. This relation is also reflected to our language while we describe our opinion about a space as 'tasteful' which is mainly part of a visual perception. Also new-born babies try to make sense of their environment mainly through their mouth and tongue by carrying whatever they can grasp towards their faces. A different case of perception called 'synesthesia' is usually related to this type of feeling, which is a neurological phenomenon in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway. People

who report such experiences are known as 'synesthetes' (URL-31). For example, when a person is listening a piece of music, he/she experiences the sensation of seeing certain colors (Hesselgren, 1967: 149). Synesthetes are exceptional people that have this extraordinary way to sense. On the other hand, in daily life most of the people may be stimulated by their gustatory senses while they see a color, form or texture. Pallasmaa (2005: 73) explains this as visual perception being also transformed into taste; some colors and fine details stimulate oral sensations. It is also known that colors are influential on our sense of hunger and appetite, thus many brands and chain restaurants use this psychological phenomena for their marketing and advertorials especially in interior design decisions. It is known that the chain fast-food restaurant 'McDonald's' is the primary company deciding their brand's visual identity and interior design colors according to their effect on appetite and eating behaviors.

Perceptions through other sensations are as definitive as visual perception when we think of a spatial phenomena. Some examples may be explanatory as a conclusion of this topic of sensations and its importance on the perception of environment. One is from a South Korean movie called '3-Iron' (a.k.a. *Bin-Jip* or *Empty House*, 2004). Directed by Kim Ki-duk, the plot revolves around the relationship between a young drifter and an abused housewife (URL-32). In one of the scenes, main character Tae-Suk is practicing on the sensations in the space and develops strategies to hide himself from the guardian of his prison. Eventually he becomes skilled on being 'invisible'; as he restricts his traces like sound, smell and even his shadow in his tiny space (Figure 2.40). Resulting his escape from the cell. This invisibility is actually an illusion, however it also reveals that phenomenological experiences about space and its contents are so significant on how we perceive (or not perceive) our environment.



Figure 2.40 : 3-Iron movie (a.k.a. *Bin-Jip* or *Empty House*) (2004). Directed by Kim Ki-duk. Prison scene (URL-33).

Another example can be given from the '*Ganzfeld*' experiments; which were held during 70's in experimental psychology trials especially on the topic of parapsychology for testing telepathy. The aim of Ganzfeld experiments were to inhibit the five senses and making the subject perceive with his telepathic sensations. In a typical Ganzfeld experiment, a 'receiver' is placed in a room relaxing in a comfortable chair with halved ping-pong balls over the eyes, having a red light shone on them; also wearing a set of headphones through which white or pink noise (static) is played for half an hour or more, a 'sender' observes a randomly chosen target and tries to mentally send this information to the receiver (Figure 2.41) (URL-34).



Figure 2.41 : Participant in a Ganzfeld telepathy experiment (URL-34).

There are no certain positive results of these experiments proving a telepathic communication; however, participants usually reports hallucinations during the experiment. As their environmental perception is blocked for a period of time, participants experience spatial mirages with detailed descriptions. This reveals that humans need to perceive environment with five senses is so crucial that when they are lack of this experience, mind begins to invent hallucinations for mental stability.

An extraordinary example for the experiments on body and its sensations can be the from works made by performance artist called Stelarc, who modifies his body with machines and digital insertions through modern robotics and other technologies. In twenty-six different performances, he has suspended himself in flesh through hooks and in another performance he allowed his body to be controlled remotely by electronic muscle stimulators connected to the internet. He has also performed with a robotic third arm, and a pneumatic spider-like six-legged walking machine that has a seat for the user in the center of the legs and allows the user to control the machine through arm gestures. In 2007, Stelarc had a cell-cultivated ear surgically attached to

his left arm (Figure 2.42) (URL-35). He explains his work and their meaning and importance on sensual and perceptual abilities of the human body:

'... technological components effectively become the external organs of the body. Certainly what becomes important now is not merely the body's identity, but its connectivity- not its mobility or location, but its interface. In these projects and performances, a prosthesis is not seen as a sign of lack but rather as a symptom of excess. ... These are prosthetic devices that augment the body's architecture by constructing extended operational systems. The body performs beyond the boundaries of its skin and beyond the local space that it occupies. It can project its physical presence elsewhere' (Stelarc, Interview with Hauser, J., 2008).

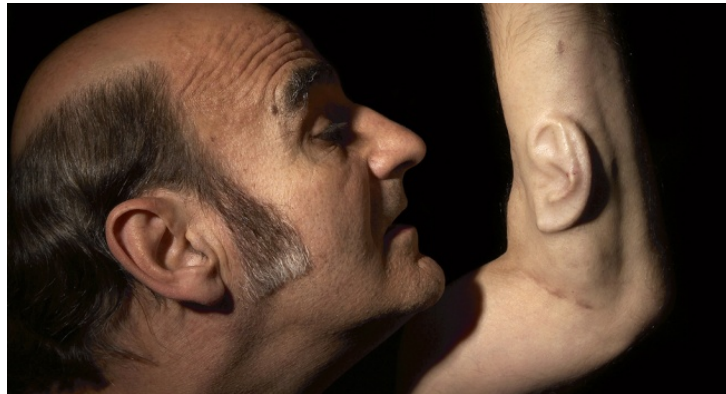


Figure 2.42 : Stelarc and his cell-cultivated ear surgically attached to his left arm (URL-36).

It can be foreseen that in the near future, our perception of space will fundamentally change through biotechnological developments such as in Stelarc's performances. That time, our senses will be expanded and we may even talk about another distinctive spatial perception.

2.2.1 Defining urban interior through common sensorial perceptions

To describe an interior space, we need a determinable boundary which are the borders of the interior. Space without boundaries is disturbing for us humans and as Pallasmaa (2005: 22) states *'Architecture domesticates the limitless space and infinite time, making them bearable, livable and comprehensible'*. Also Hesselgren (1967) mentions that while cosmic space -outer room- defines nature and sky, the architecture sets up a secondary space -inner room- consist of buildings in architectural scale and squares, streets, green areas etc. in urban scale. Additionally,

an interior may turn into an exterior and likewise, an exterior may turn into an interior related to the space and time conditions and perception.

The approach to this chapter's boundary concept is as Heidegger (1971: 154) describes the concept of space and boundary: *'What the word for space, Raum, Rum, designates is said by its ancient meaning. Raum means a place cleared or freed for settlement and lodging. A space is something that has been made room for, something that is cleared and free, namely within a boundary, Greek peras. A boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something begins its presencing. That is why the concept is that of horismos, that is, the horizon, the boundary.'* Due to the fact that these sensations are relatively more 'intimate' to the body, their boundaries are also defining an interior space close to the human scale as it is mentioned in previous chapter. However, while searching for urban interiors through different types of stimuli, it is acknowledged that as Hill quotes from Sullivan (1985: 107) *'Sight paints a picture of life, but sound, touch, taste and smell are actually life itself.'* and Hill interprets: *'The body is capable of contacting and truly understanding this life, this reality, through a synergism of the senses, for the body is always actively reacting and collecting non-visually'* Hence, even we mainly separate to investigate the sensations, it is endorsed that environmental perception is a consequence of an holistic experience of all these different types of senses. Here under this title, urban interiors are revealing themselves as Shirazi (2014: 16) describes Heideggerian phenomenology which *intends to make matters manifest as they manifest themselves.*

Pallasmaa (2005: 50) emphasizes the bodily sensation's importance in urban space as follows: *'I confront the city with my body; my legs measure the length of the passage and the width of square, my glance reflects my body towards the cathedral's facade unconsciously, my body wanders through fillets and contours, feeling sizes of coves and bulges; the weight of my body meets with the mass of the cathedral gate and while it is entering to the dark abyss behind the gate my hand grasps its knob. My body and the city completes and defines each other. I live in the city and it lives in me'.* In this chapter, urban interior examples are shown with their boundaries which are chosen whether we sense and perceive them not only visually, but also with other volatile stimulations.

As an example for visual sensational boundaries creating an interior in urban environment, spaces that are determined by the experience of light and shadow can be given. When the weather is uncomfortably warm, people in urban area tend to settle under shadows and likewise in chilly days they prefer sunlight to get warm in an outdoor space. Even there is no physical boundaries, these kind of areas are revealing an interior space; even the language gives the clues of it as an expression 'in' shadow or 'in' light. A scene from the movie 'Miracle in Milan' from Vittorio de Sica (Miracolo a Milano, 1951) may be helpful to visualize this interior space phenomena. In the scene, people living in suburbia who are not able to get warm in winter are waiting for the sunlight and whenever they see the sunlighted area, they gather under it and try to get warm in toughly cold weather (Figure 2.43).



Figure 2.43 : Miracle in Milan, Scene with the urban interior defined by sunlight beams (URL-37).

As explained in previous chapters, different types of sensations may merge together and create an urban interior simultaneously. In this manner, the sunlight also reveals a tactile interior sensation with the feeling of warmth.

For auditorial boundaries, urban environment is a complicated domain. As cities involve a huge audio diversity, it can be challenging to determine urban interiors through sound. However some districts can be defined by their soundscape. A street bazaar is recognizable by the voices of salesmen even if we are in the parallel street and it is not in our visual horizon. Also playground is another soundscape defined by children noises. Another specific example from Istanbul can be the nostalgic tram's bells in Istiklal Street; which is unique only for this district. In some cases, soundscape may also become 'visible'; street musicians spontaneously create a soundscape interior in urban area through their music and the audiences creating a round space surrounding the performance (Figure 2.44).



Figure 2.44 : Street Musicians on Taksim Square with the auditorial urban interior they create.

Urban interiors determined by olfactory sensations are very detectable even if the feeling is invisible and mute. In the fish market, we wander in an interior space defined by fish smell, and while we are walking close to a street for spice-sellers, it seems that we are walking between walls made of curry and thyme. Streets of seaside districts are also urban interiors defined by the salty smell of the sea and a flower stand creates a sphere-shaped urban interior with scents of different flowers. It is almost touchable when we sense the smell of pop-corn on the street, the chestnut salesman is working inside a boundary from the warm scent of roasted chestnuts which is a tempting interior in winter season (Figure 2.45).



Figure 2.45 : Roasted Chestnut salesman 'in' his store.

The warm touch of sunlight is already given as an example for tactile urban interiors but also other types of tactile sensations create interiors in an urban environment. One of the most visible example can be floor patterns for blind people to find their way in public spaces; as they have a special grainy surface that they can feel under their feet and with their guidance stick. These lines create an interior both visual and tactual. Also ground surface differences create tactile interiors such as green areas that people enjoy to lay down in an urban area. These surfaces are chosen by people as they are relevantly softer and more comfortable with its grass cover. Even water can be a boundary for an urban interior in case of water squares that are designed for public relaxation and enjoyment in warm weather conditions (Figure 2.46).



Figure 2.46 : An urban interior through "waterwalls". Crown Center Square Fountain, at Crown Center, Kansas City, Missouri (URL-38).

Urban interiors that are stimulating our gustatory sensations are relatively difficult to determine but actually they can be somehow the most intriguing places in an urban environment. Even usually cities can be described as monotonous grey or glass massive blocks with some green in between, there are some different cities and urban spaces that give the impression of a fairytale realm like in the story of Hansel and Gretel by means of the phenomena called *synesthesia*. One of these cities is Barcelona with its unique design, Park Güell by Antoni Gaudí. Gaudí is known for his inspiration from organic shapes of nature and pushing the boundaries of architectural construction systems with his unique forms while using vivid and radiant color plate for the finishing surfaces. In Park Güell, the spatial experience is defined by visual perception, however, colors and forms stimulates the feeling of taste, as if these boundaries are eatable materials (Figure 2.47).



Figure 2.47 : Park Güell in Barcelona with its urban interiors intriguing gustative sensations with their forms and colors (URL-39).

As we perceive these urban interiors through our basic senses, there is also another kind of urban interior perception through time and motion in urban environment. These kind of interiors are explained in the next chapter with examples.

2.2.2 Space, time and motion in urban interiors

What then is time? If no one asks me, I know; if I want to explain it to a questioner, I do not know... We measure times. But how can we measure what does not exist? The past is no longer, the future is not yet. And what of the present? The present has not duration...when I measure time, I measure impressions, modifications of consciousness.

Saint Augustin

Urban perception is in some ways different than experiencing an architectural work. As Holl, Pallasmaa and Perez-Gomez (1994: 48) mentioned, we understand distinct objects and fields as a 'whole', however, our experience of a city can only be perspectival, fragmented, incomplete. This kind of experience can also be felt in interior spaces when we are inside of a volume. Most of our perception is limited by different types of boundaries from within, thus we can only understand a relatively complex interior like an urban space only by moving inside, outside and around. Again according to Holl, Pallasmaa and Perez-Gomez (1994: 55), it is stated that our perception develops from a series of overlapping urban perspectives, which unfold according to angle and speed of movement.

The concept of time is highly observable in urban environment mainly through sun and shadow patterns. This daily change in the urban space defines and locates urban interiors with a considerable diversity in every hour of the day and every season of the year. In Figure 2.48, the diagram is showing the shadowed areas between the buildings in each hour of the day.

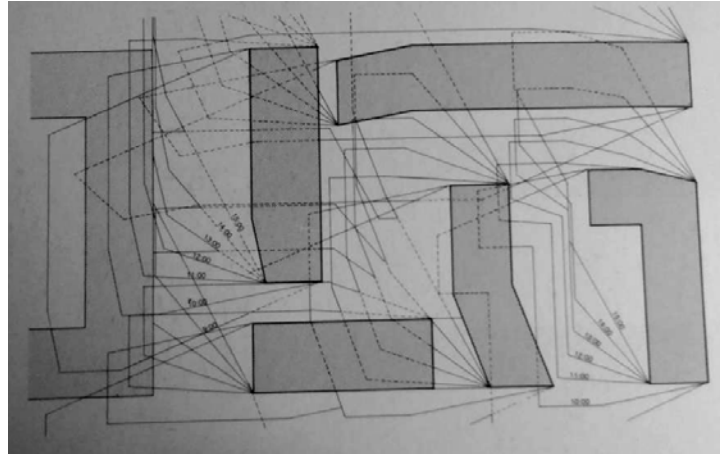


Figure 2.48 : Makuhari Housing Project, 1992, in Chiba, Japan. (Holl, Pallasmaa and Perez-Gomez, 1994: 78, 148).

When we think of seasons, they are also affecting urban interiors majorly as the weather conditions determine people's usage of urban space. It is noticeable that in cold weathers urban spaces are relatively vacant while in a comfortable weather urban areas are filled by people and their activities. A group of people gathering under a specific corner in a street gives the impression of an enclosed space and sometimes there can be occasions that even if we want to enter that space we cannot due to the crowd 'inside'. This feeling can be experienced especially in concerts as people wish to see the performance from front rows, they create a boundary with their bodies that is challenging to pass through.

As Grange (1985: 78) mentions: *'One can begin with the vague suggestiveness of the word 'environment' itself. Environment is verbal and bespeaks activity. The verbal form -'to environ' - means to surround, which indicates that every environment is what it is because of an exterior that marks off what is outside and an interior that shelters and defines what is inside'*. In this case, sometimes people who experience a common phenomena may become the boundaries that are defining an interior environment by envining with their bodies. Simmel (1903) goes along with the importance of perception of time in the city with his essay *'The Metropolis and*

Mental Life' as citizens sharing the urban life in metropolis are with so diverging interests and personalities, they also have different relationships and activities that are intertwining into a multi-personal organism, thus, punctuality in activities and appointments are extremely crucial as it can cause an extreme chaos in an urban life.

Pallasmaa (2005: 40) also approaches the concept of time through materiality of the built environment and criticizes the new synthetic coverings because of their 'timelessness' effect, as natural materials reveal their ages and histories as well as their origin and singular story of their usage by people; however, today's synthetic materials with wide glass surfaces and enameled metals are ageless and they are lack of spatial story because they are not carrying any trace from time and people. This materiality of time is also crucial in an urban space as they are where people engage with their personal public history. In this manner, one should not consider vandalism as a concept of 'trace', rather a 'trace' that is left by people and weather involuntarily. An old wooden bench with cracks that stays in its place for years while we are growing old, or a path emerged by pedestrian movements are important clues for personal or common interior boundaries defined in urban environment.

There is another psychological factor in urban environment which is so dependent on the cultural background of the location, which is 'human proximities'. It is known that every person in a public space defines an individual space, an interior space, which is so definable that when it is trespassed by another person without permission, it can be highly disturbing. As Merleau-Ponty (1962) mentions *'Insofar as I have a body through which I act in the world, space and time are not, for me, a collection of adjacent points nor are they a limitless number of relations synthesized by my consciousness, and into which it draws my body; I belong to them, my body combines with them and includes them'* (quoted by Shirazi, 2014: 32,33). Hall explains this proxemic interior perception which we may sense with our fundamental senses and during our movement in urban area by an analytic chart in Table 2.1. As it can be seen from Hall's chart, human body is not only perceiving, but also acting as a spatial boundary, defining different scales of interior spaces even just by its existence. White also deals with the activities that are held in urban space. He explains importance of human activities as *'the sense of place ... is created by people being and doing things there. And staying creates place. Even a slow moving,*

crowded line of people moving through a narrow portal fosters a kind of action stability, a belonging, a place' (White, 1999: 76).

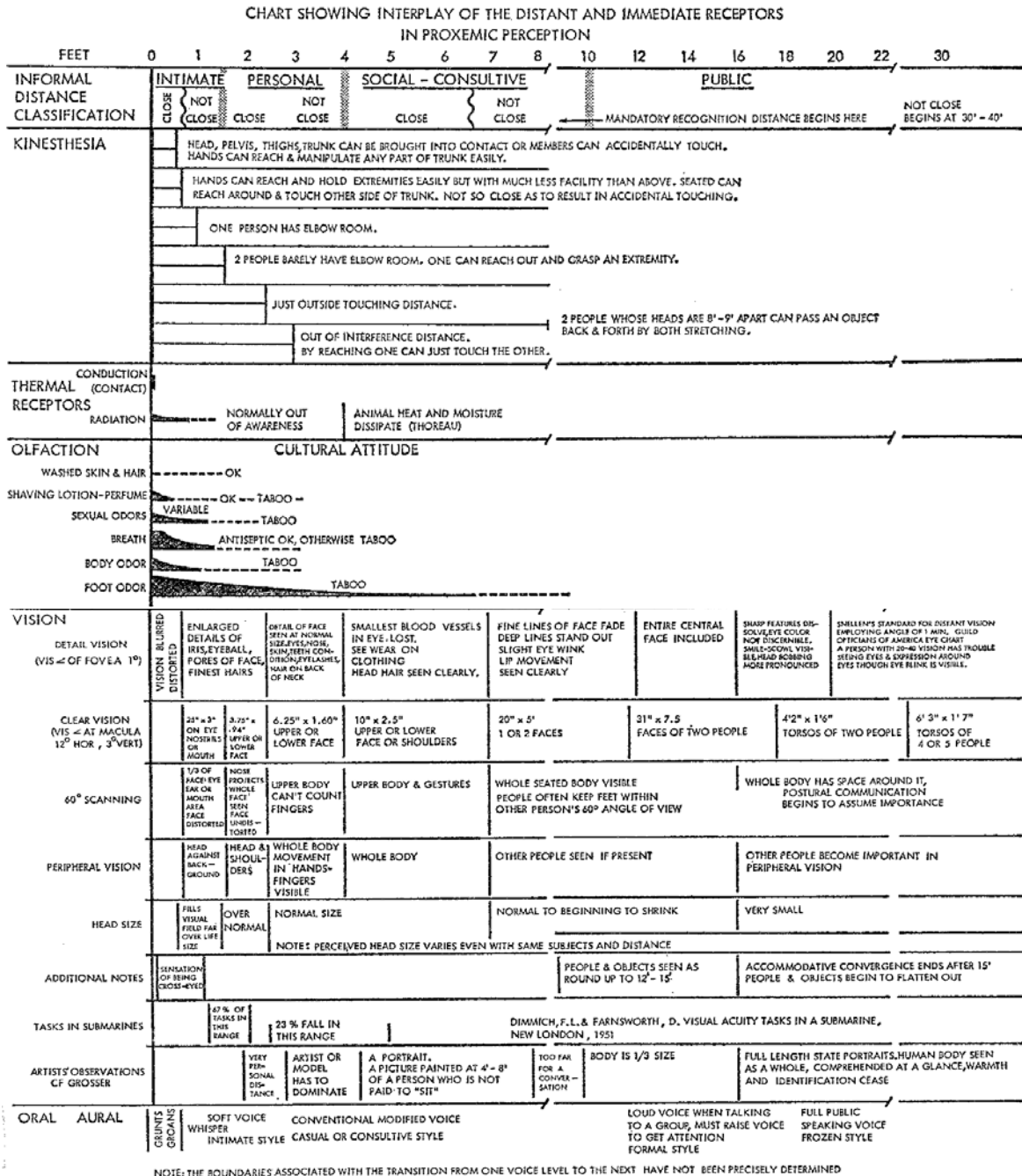
Movement and time are inseparable concepts as movement requires sequences. Traces left during the movement in an urban environment also define some spatial aspects with an interpretation of boundary. Car traces reveal that space is open to the vehicle traffic, similarly there are invisible paths that pedestrians create with their common movements by choosing the most useful and preferred routes. Simmel (1903) explains 'road' phenomena as follows : '*Path building, one could say, is a specifically human achievement;...accomplish the miracle of the road: freezing the movement into a solid structure that commences from it and in which it terminates*'.

In documentaries '*Baraka*' (1992) and '*Samsara*' (2011) both directed by Ron Fricke, time-lapse scenes from different kind of spaces and movements are mainly prevailed. This technique films movements of the people during their activities in urban spaces are particularly helpful to visualize the spaces formed by their paths and the interiors with boundaries from their movement (Figure 2.49).



Figure 2.49 : Shibuya Pedestrian Passage in Tokyo, Japan, two following scenes from the movie *Baraka* (1992) by Ron Fricke (URL-40).

Table 2.1 Chart showing interplay of the distant and immediate receptors in proxemic perception (Hall, 1966: 118, 119).



In short, urban interiors defined by time and movement are relatively most struggling spatial senses to determine, unless we focus on our sense of being and our interactions with urban environment and other occupants in this space.

As a conclusion to these chapters about urban interior definitions according to human body dimensions and urban phenomena that are perceived by our different sensations, we can assume that the interior space is relatively different than what it is accepted in general terms of architecture. Interiors are both individual spaces unbound to a building as we can perceive an interior in open spaces like urban environments. They are highly related to the concept of their environment as all spatial features are shaped according to their micro scale components (as for interiors their elements such as furnishings and finishing materials etc.) and their macro scale influencers (for an interior of a building, building type and its specialties with climatic and environmental conditions).

With this point of view, interior architectural design can also be focused on urban spaces, with its specialties especially concerning with the scale and spatial phenomena and perception. An interior is an interior because of its relation with human. Thus, urban interiors should take human factor into account as a primary design problem.

The thesis continues with a case study of an urban interior and a conceptual urban interior design proposal according to the theoretical basis and their outcomes.

3. TAKSİM SQUARE AND CUMHURİYET STREET UNDERPASS: AN URBAN INTERIOR

As architecture is both a theoretical and a practical field, it is found necessary to investigate previous urban interior space findings combined with a conceptual design proposal with an actual space and analysis. For this reason, İstanbul Taksim Square and the recently constructed underpass beneath the square called Cumhuriyet Street Underpass are chosen for the urban interior conceptual design. The motive for this choice was firstly the specialty of İstanbul with its historical and demographical aspects and secondly Taksim's uniqueness for being one of the transportation hubs in the city with its importance in İstanbul citizens' urban memory. Taksim had massive spatial transformations through a relatively short period of time. Additionally its social frame is variable because of the people using this district keep changing throughout the day.

This chapter of the thesis is to briefly introduce İstanbul and Taksim district; especially focusing on urban morphology and recent history. Later on, the pedestrianization project for Taksim Square is explained; which is constructed between 2012 and 2013. This project caused several arguments between the municipality and urban planners together with nongovernmental organizations (NGO's) and civilian oppositions, as the project involved conflicts according to legal regulations of the urban planning laws. The project had to be ceased in the middle of the construction process, because of the court decision and also mainly because of June 2013 worldwide social protests known as 'Gezi Movement'. The excavated underpass tunnel is finished as a vehicle underpass with pedestrian access, because the tunnel involves two bus-stops across the vehicle road. Until now (summer 2015), Taksim Square and the Underpass are left without any landscape arrangements.

This chapter explains the current state and its analysis as an urban interior according to the definitions of urban interior that are stated on the previous chapters.

3.1 İstanbul and Taksim Square: Background Information

In this chapter, İstanbul is described with a general overview and mentioned about the recent socio-spatial changes beginning in the late 1980's. Taksim and close-by districts are explained with more detailed historical background.

İstanbul is the most crowded and chaotic metropolis not only in Turkey but also in all Europe with its fourteen million population according to Turkish Statistical Institution's address based census of the year 2013 (URL-41) (Figure 3.1). It accommodates eighteen percent of the Turkey's population. Because of its geopolitical aspects, it has always been a tremendous attraction point, since it had been established. It has been the capital of many important civilizations such as Roman Empire, Byzantine Empire, Latin Empire and Ottoman Empire throughout history until the foundation of the Republic of Turkey in 1923.



Figure 3.1 : Satellite view of Turkey and the location of İstanbul.
(Captured from Google Earth on May 2015).

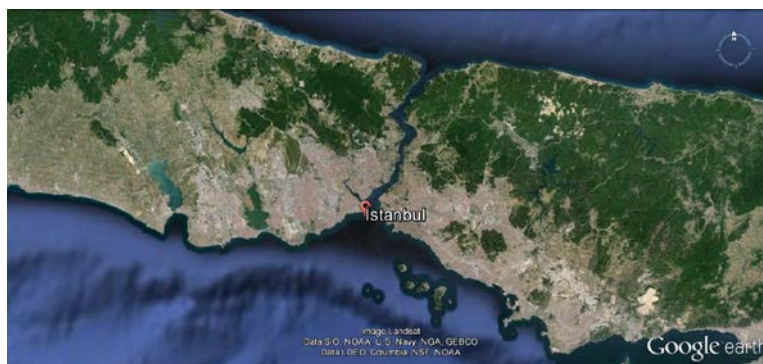


Figure 3.2 : Satellite view of İstanbul and the Bosphorus connecting Europe and Asia (Captured from Google Earth on May 2015).

Connecting Europe and Asia and on the well-known trade route 'the Silk road'; it has become an important commercial city with the access to both Black Sea and Mediterranean Sea. Its geographical situatedness made the city more and more populated over time and its importance almost never changed until today (Figure 3.2).

According to Kamacı (2012: 15, 16), In the post-1980 period, significant changes took place in Turkey's socio-spatial structure, especially in Istanbul. Rapid urbanization, ageing of population, changing family typology, the differentiation and specification in financial institutions and service industry are the new dynamics that one can refer to the restructuring the city's social and economic structure and creation of new life-styles. In simplistic words, these changes had its impact on urban systems, physical set-up, social structure and finally on the growth of Istanbul. As an example, these changes lead citizens to leave the central districts for commercial and financial settlements and the residential areas moved towards the peripheral regions of the city. As a consequence, vehicle density increased and became the leading problem in this dense metropolitan city, thus, the necessity for underground passage system have been emerged. As a solution for junctions, these kind of underground traffic systems also created wide open areas left for pedestrian usage, such as the undercrossing of Okmeydanı Justice Palace surrounding and Taksim Square. However, most of these areas are without any definition as they are constructed in a short period of time without taking into consideration their location's urban identity. These massive interventions to the urban configurations have created city fragments which are extensive open spaces that lack of urban definitions while removing the traces of the previous meanings of an urban life. In this manner, Taksim Square also have passed through many urban planning developments. Its historical background may explain the reasons of these interventions.

Even Taksim is defined as a square, its history as a square is relatively short. Hoşkara (2014) defines the urban term 'square' as an area or a space that its borders are defined by buildings, which is called with different names through history with diverse formations and typologies. In western cities, squares are usually well-structured public areas that provide a common space for people's cultural, economical and social events. However in Anatolia, squares are generally for riding sports at the suburban borders of residential areas. In Ottoman culture, the public's need of a western type of 'square' is generally answered by mosque courtyards, military barrack courtyards, complex courtyards, inn-yards. These are public places for people to gather for celebrations, interactions or even protests (Aslan, 2014: 20). Similarly, Taksim was actually a junction point in suburban with green fields rather than a well-defined western

type of a square, until twentieth century. It is located at the northern borders of Beyoğlu county, at the top of a hill which can be seen from the historical peninsula across the Golden Horn. This part of İstanbul had been considered as out of the city in the early history, with a name called 'Pera' by Byzantines; which means 'the opposite shore' (Gülersoy, 1986: 7), (Figure 3.3). The lower parts of Pera close to the Golden Horn is also known as 'Galata' district, and this name lasts until this day. It can be seen in Figure 3.3 that Pera and Galata are considered apart from the city of İstanbul by Byzantines. This point of view to the 'opposite shore' lasts until late Ottoman times.

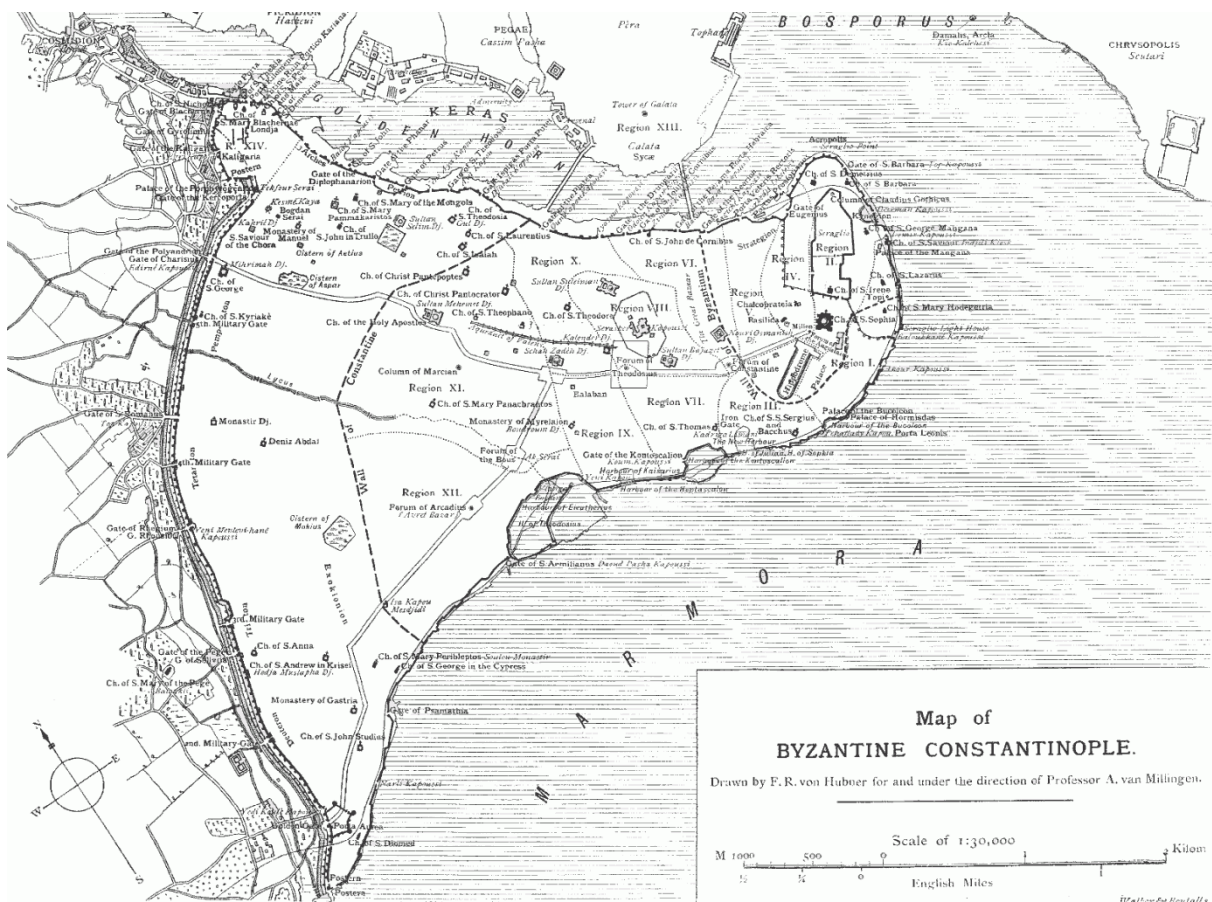


Figure 3.3 : Detailed map of the City of Constantinople and its most important buildings in Byzantine times by F.R. von Hubner, 1899 (URL-42).

Galata was a green field surrounded with walls until the sixteenth century (Figure 3.4). The time when the first important settlements; Galatasaray military school and Galata lodge, used by mevlevi dervishes are established. In the seventeenth century, foreign merchants began to dwell in this region and embassies were built; a main street along these buildings have been emerged in time which is called '*Grand Rue de Pera*' by foreign dwellers and '*Cadde-i Kebir*'

by Turkish people until the proclamation of the republic. The street is known as İstiklal Street afterwards (Figure 3.5).

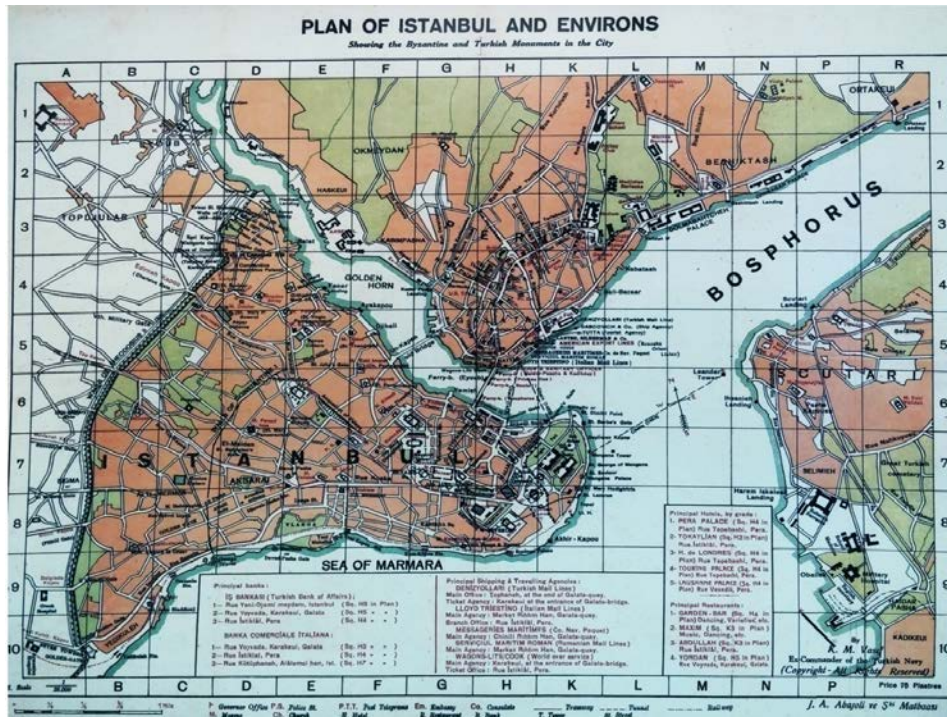


Figure 3.4 : Plan of İstanbul and Environs by K. M. Vasif, an ex-commander of the Turkish Navy. This map is taken from Alman Mavileri (German Blues), İstanbul Maps from 1913-1914 pre-World War I.



Figure 3.5 : Closer frame to the Pera district taken from Figure 3.4. 'Rue İstiklal' and Taksim's location with the Artillery Barracks can be seen.

In the eighteenth century, dwellings are increased and reached to the Taksim location. This increase in close-by population brought clean water necessity to Pera and its surroundings. In 1731, a water supply network has been built and its main net is finished at Taksim with a water reservoir and a '*maksem*', which is a system that distributes water to the different regions in the city (Figure 3.7). These two buildings survived until this day. The verb 'distribute' (*taksim etmek*); have become the name of this location later and continued to be ever since. In the nineteenth century, this area was still a green place. The area in front of the '*maksem*' and reservoir was a flat field, however, the reservoir was creating a sense of border and giving clues of a square even from those times (Kuruyazıcı, 2014).



Figure 3.6 : A view of bosphorus from Taksim Garden by Antoine-Ignace Melling in 1819 (Gülersoy, 1986: 107).



Figure 3.7 : An image showing the hexagonal '*maksem*' (Gülersoy, 1986: 9).

This recreational area was actually a mixture of Armenian, European and Muslim cemeteries. For foreign visitors, Muslim cemeteries were considered as peaceful gardens to walk around and also there were coffee houses to spend time in front of the view managed by palace gardeners (Gülersoy, 1986: 106). These cemeteries turned into a public garden throughout time and it is opened as the first public park of İstanbul in 1869 (Figure 3.6).

Pera became an important attraction point in İstanbul in the nineteenth century because of its commercial life and the westernization movement in Ottoman Empire. Pera, Galata and Karaköy happened to be a non-Muslim district since its early times because of the *Levantine*s' (Latin Christians) residential, governmental (embassies) and commercial locations. In Figure 3.8, the districts with a concentration of Muslim, Christian and Jewish populations are indicated and dark brown colored areas are Christian neighborhoods, orange areas are Muslim settlements and yellow areas are Jewish neighborhoods. Since westernization became a government policy of the Empire, these European-looking districts of İstanbul became popular amongst elite aristocratic Ottomans. With its tram rails, air gas network and funicular system (which is one of the first examples in the world), Pera was genuinely a small European district (Aslan, 2014). Nonetheless, Taksim was still covered with woods and it was a junction point of the rural roads at the beginning of the Grand Rue de Pera.

Taksim was a suburban area until the end of the nineteenth century. A sign for this was the military barracks built here. As Gülersoy (1986: 6) mentions, massive military complexes are being built outside the city borders or at least close to the peripheries and when we look at the maps from the beginning of the twentieth century, we see these kind of barracks with extensive plan schemes close to Taksim; especially the Taksim Artillery Barrack in front of the reservoir and maksem is remarkable with its scale (Figure 3.9).



Figure 3.8 : German C. Stolpe's map, showing the demographic makeup of İstanbul. (Kubilay, 2010, pg. 160).



Figure 3.9 : Necip Bey's Maps, 1918 (Kubilay, 2010: 224). İstiklal Street, Taksim's location and barracks are indicated in red.

Gülersoy (1986: 78) talks about the Taksim Artillery Barrack as: *'The monumental building on the right side of the street heading to Harbiye (another military area) was a nineteenth century barrack ... carrying the characteristics of its era, with a complicated and styleless architectural order, however it was a respectably*

spectacular building' (Figure 3.10). This building from 1780 had its vital and colorful times until the downfall of the Ottoman Empire with artillery



Figure 3.10 : Taksim Artillery Barrack after the renovation of Mahmud II in 1812. Gravure by Charles Pertusier, 1817 (URL-43).

demonstrations, ceremonies and celebrations with its vast number of military personnel, however, during the World War I, this enormous complex began to be desolated.

This complex also had an enormous courtyard, which is used for different sports events in the times of occupation. Gülersoy (1986: 80) quotes from an american document describing İstanbul during the Turkish Independence War: '*... this was the largest and the most popular recreation and sports area of the city and its surrounded with many coffee bars, casinos and cinemas. There were two baseball and two football fields in the courtyard. Baseball, of course, mostly had been played by foreigners*'. Until the early years of the Republic of Turkey, this barrack complex had been used in this way and even the first football game of the Turkish national team held in this courtyard three days before the proclamation of Republic in 1923. It had also been used for bicycle-riding practices as these two-wheeled vehicles began to be popular in İstanbul (Gülersoy, 1986: 80). It can be stated that this courtyard had meant to be a public open area even in those times when the barrack still exists.

After the establishment of the Republic, the need for a 'civilian' and 'secular' square became important to remark the new regime and for organizing western-type ceremonies. Historical peninsula was full of great Ottoman monuments and small wooden settlements, however, Taksim and its surroundings were developing relatively in a modern and western appearance with new apartments and

infrastructures and thus, Taksim field have been chosen for this purpose (Gülersoy, 1986: 27). A monumental sculpture with eleven meters-height had been built by the Italian professor Pietro Canonica and the pedestal with landscape planning had been made by Giulio Mongeri, describing Atatürk with his cadre on its four façades. Taksim have become the symbol of the Republic after the monument's settlement in 1928 (Figure 3.11 and 3.12).



Figure 3.11 : Taksim Monument of Republic (Gülersoy, 1986: 22).



Figure 3.12 : Taksim Artillery barracks on the map taken from Alman Mavileri (German Blues), İstanbul Maps from 1913-1914 pre-World War I.

In 1936, French architect and urban planner Henri Prost had been invited in order to prepare a master plan for İstanbul. This planning also projects some regulations to Taksim and its surrounding, proposing the demolition of Taksim Artillery Barrack and create a green area instead (Kuruyazıcı, 2014). Taksim Cumhuriyet Square have

been planned on the stable area of the barracks, which is demolished in the first hand (Figure 3.15). This proposal have been approved in 1939 (Figure 3.13). Following the approval of the master plan, stables in front of the monument had been demolished and the square got more than two times wider. However, this also caused the loss of scale and proportion both in the square and in the monument (Kuruyazıcı, 2014).

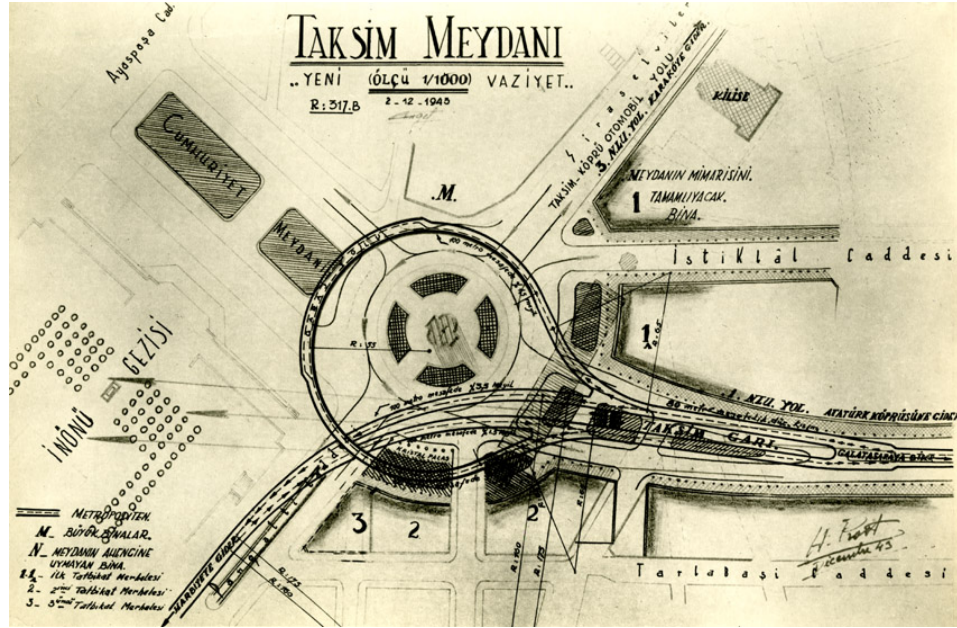


Figure 3.13 : Taksim Square and İnönü Gezisi (Gezi Park) plan drawing by Henri Prost. (URL-44).

According to Dr. Lütfi Kırdar; the Mayor and Governor of İstanbul of the date the İnönü Gezisi (later called Gezi Park) was thought as a 'promenade' of İstanbul similar to the western urban planning examples like Tuileries in Paris. (Gülersoy, 1986: 48) (Figure 3.14). For this reason, Taksim Artillery Barrack complex had been demolished, beginning with its stable buildings in front of the Taksim monument (Figure 3.15). Gülersoy criticizes this demolishment because of the historical value of the complex and states that this building could have been useful to the public with its wide courtyard and wings with deep halls that could have been used for exhibitions (1986: 82). However, the government and municipality was having financial difficulties after long periods of war, thus, they couldn't afford the renovation costs of this massive building. At the time, demolishing and creating an urban promenade have been considered as a proper and logical idea.



Figure 3.16 : İnönü Gezisi (Gezi Park) after its opening (Gülersoy, 1986: 54).

Taksim and Beyoğlu district have become occupied with many settlements, especially modern apartment buildings in a very short time while Prost's master plan was being constructed (Figure 3.16). Taksim was - and still is, despite how much İstanbul have changed in recent decades - one of the most attractive points in the city with the casinos, night clubs, cinemas, theatres and modern European stores on the İstiklal Street. Vehicle traffic was increasing with the population and the monument turn into roundabout instead of a square. The tram was also turning around this point, increasing the junction effect. Talimhane (military exercise fields) also have been occupied with the buildings between 1930 and 1950 (Figure 3.17).



Figure 3.17 : Talimhane field's change between 1930 and 1950 (Gülersoy, 1986: 74, 75).

Even it is occupied with vehicle traffic, the wide area of the monument and its front have been recognized and accepted as a square by the citizens. Since 1930's, this area have been preferred for celebrations, parades and ceremonies, and also historical events which are notable and unforgettable for the public memory. One of these happened in 1977 May Day. According to some sources, approximately five hundred

thousand people gathered in Taksim Square for 1977 May Day celebrations. In the middle of the program, some unidentified people fired into the crowd from the top of the reservoir and Etap Hotel (called The Marmara nowadays), causing an outrageous panic amongst activists and in this chaotic crowd, thirty four people lost their lives (URL-46). This traumatic case remains unresolved and ever since, the May Day celebrations in Taksim Square causes contradictions.



Figure 3.18 : Taksim Monument and Cumhuriyet Square in 1986 (Gülersoy, 1986: 58).

While Taksim was gaining its meaning as a square amongst public memory, its urban morphology was undergoing massive interventions. During Tarlabası Boulevard constructions in 1986, the facing apartments of Talimhane on Cumhuriyet street had been demolished. The plan scheme of the square have become more and more extensive and according to Kuruyazıcı (2014), Taksim have lost its urban morphology as a square and turned into an amorphous vast space without proportion and scale. The Atatürk Culture Center (AKM) building and The Marmara, are not adequate to give the impression of a square (Figure 3.18).

Taksim have always been a speculative area for urban planning proposals. In 1987, an urban design competition was held by the Municipality called 'Taksim Square Urban Design Project Competition'. The winning project was designed by Vedat Dalokay and Hakan Dalokay. This project was proposing to carry the vehicle traffic in Cumhuriyet Street and in front of the culture center to the underground with tunnels; creating an extensive recreational area with a huge round fountain (Figure 3.19).

This was the first time that underground tunnels were thought as a solution for Taksim Square's vehicle traffic. This project was never constructed due to the changes in municipal polities.

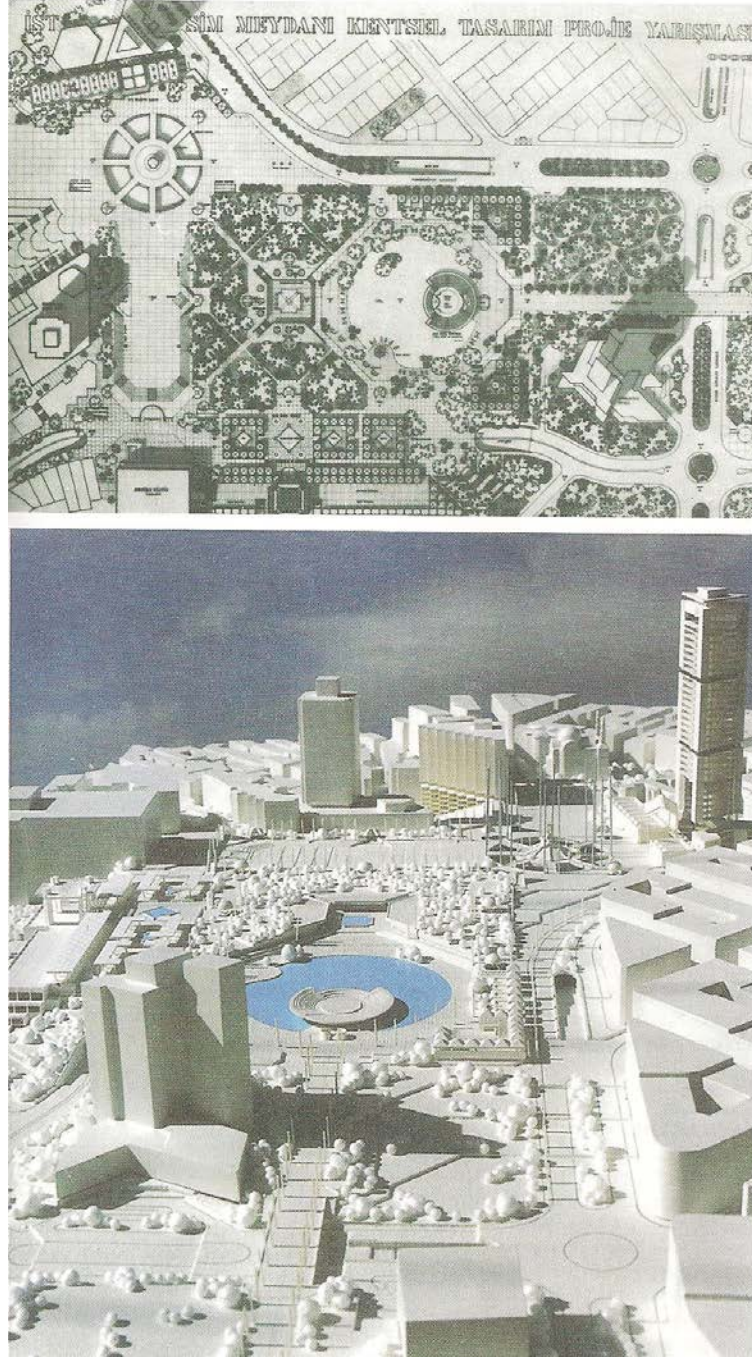


Figure 3.19 : The winning project of 1987 Taksim Square Urban Design Competition. Architects Vedat Dalokay - Hakan Dalokay. (Kuruyazıcı, 2014).

The last significant change happened in Taksim before the Pedestrianization Project in the year 2000, which is the M2 underground subway line connecting Taksim towards north with Levent district. The same year, İstanbul have had its highest rate of population growth compared to the previous years with thirty seven per cent, reaching ten million citizens in this metropolitan city (URL-47). This extremity might be related with the economical crisis of the year 2000 and domestic migration from Anatolian villages. As a result, subway connections became a crucial need for this expanding metropolitan city. M2 line have been extended year by year and when we look at İstanbul's current railway map with the ones that are under construction, it can be seen clearly that Taksim have become the most attractive point of the city (Figure 3.20). However, Taksim subway entrances were not designed sufficient enough to define this important square.

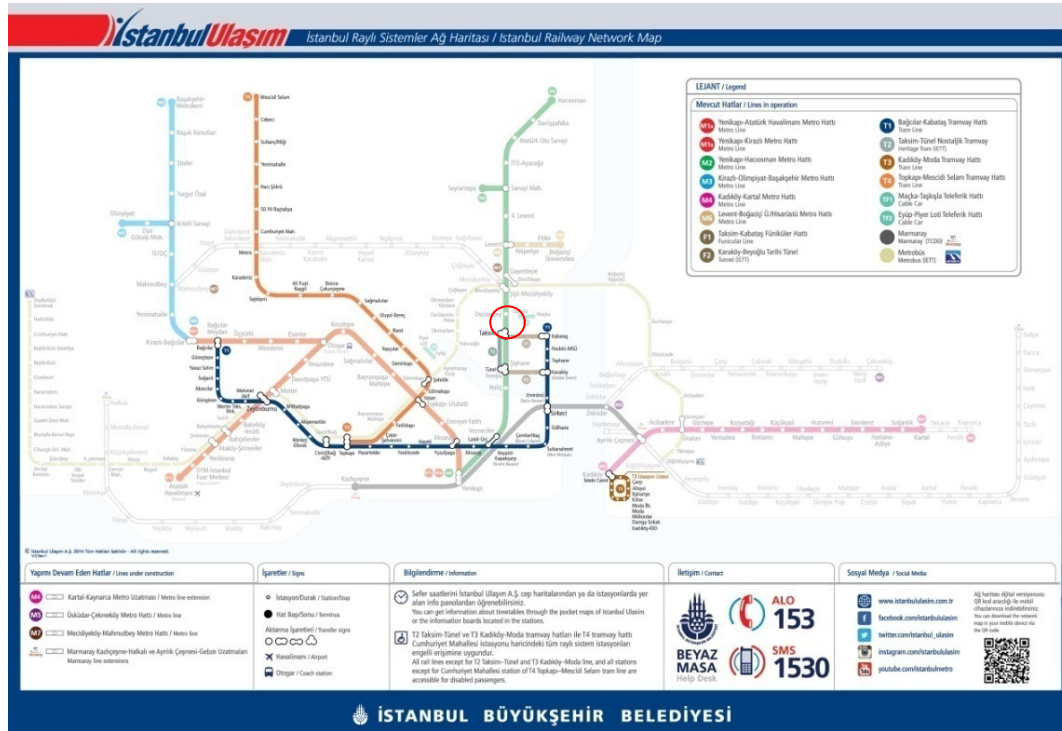


Figure 3.20 : İstanbul railway network scheme (URL-48). Taksim is marked with a red circle.



Figure 3.21 : Taksim Square satellite view of the year 2002 from Google Earth. Subway entrances are marked.

As it can be seen in Figure 3.21, the square became a transportation hub with a city bus terminal in front of the Gezi Park stairs in the middle. The square had been used this way until October 2012, when passage of vehicles and pedestrians were restricted due to the tunnel constructions of the Taksim Pedestrianization Project.

3.2 Taksim Pedestrianization Project (TPP)

When Taksim Pedestrianization project (TPP) was announced by the metropolitan municipality in 2007, many speculations and discussions arose, even there were no underground tunnels or Gezi Park interventions in the project scheme (URL-49) (Figure 3.22). Municipality website explains the 2007 version of the project as a pedestrianization and vehicle circulation planning of Taksim square and the aim is claimed as to connect the Gezi Park with İstiklal street and the Taksim monument. New pedestrian area would be fourteen thousand square meters with this new urban plan.

In 2011, İstanbul Metropolitan Municipality (İstanbul Büyükşehir Belediyesi, İBB) council approved the TPP with a consensus, however the accepted project was proposing underground tunnels for all the vehicle traffic of the square and the demolished Taksim Artillery Barrack was to be reconstructed with a restitution project to the existing Gezi Park, while the Republic monument would stand in its place (URL-50). With this proposal, the extensive pedestrian area was getting larger

to approximately ninety eight thousand square meters. City bus terminal was to be moved behind the AKM building and Taksim Square's main transportation was planned to be with nostalgic tram subway system and underground vehicle traffic (Figure 3.23, Figure 3.24 and Figure 3.25).



Figure 3.22 : TPP and vehicle circulation planning scheme of the İBB as it is announced on their website in 2007 (URL-50).



Figure 3.23 : TPP of the year 2011 from the animation of İBB (URL-51).



Figure 3.24 : TPP of the year 2011 from the animation of İBB, showing underground vehicle traffic (URL-51).

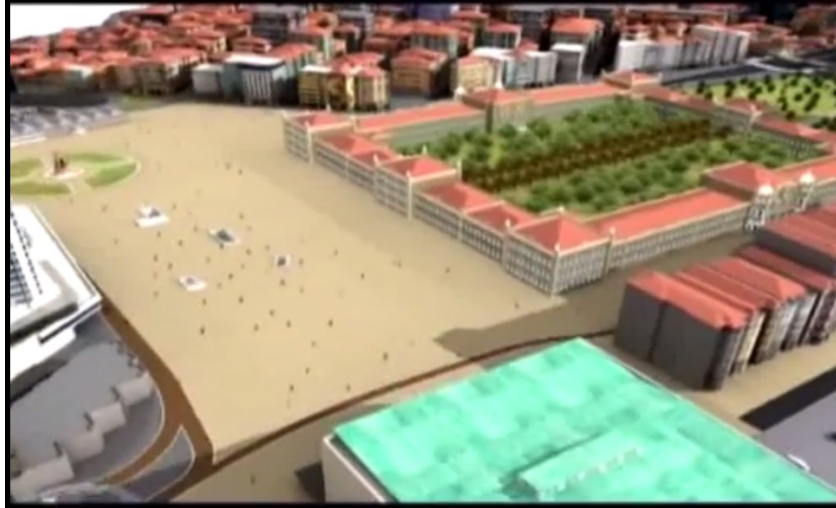


Figure 3.25 : TPP of the year 2011 from the animation of İBB, a 98.000 square meters Taksim square (URL-51).

Municipal Council announced their decision on İBB website on 16.09.2011 with an abstract of judgment as '*1:5000 and 1:1000 protective Master Plan Alterations of Taksim Square Pedestrianization Project in Beyoğlu County*' (URL-52). According to this announcement, project area was including Taksim square, which was occupied by the transportation transfer area and also involving pedestrian routes, public garden (Gezi Park), Taksim subway and Kabataş funicular lines, İstiklal Street tram lines together with Taksim Republic Monument (a registered monumental work of art) in present situation. This version of TPP was approved by Seism and Earth Research Management and Railway System Management, however, Association of Beyoğlu Embellishment and Protection was stating that the project only includes the vehicle transportation network plans and all the ground area was proposed as a

square and yet there were no suggestions on the plan for this wide ground area (URL-53). Additionally, Chamber of City Planners also criticized the TPP as despite the fact that this project is towards the vehicle and pedestrian circulation of the square, there are no suggestions for land route public transportation terminal's presumptive locations (URL-53).

After the new TPP's announcement, many discussions, panels and statements were made. One of these panels held in French Anatolian Research Institute (Institut Français D'études Anatoliennes, a.k.a. IFEA) on 29 November 2011 titled 'Taksim'i Ne Yapmalı?' (What to do with Taksim?) and published on the well-known Turkish digital architecture publication, *Arkitera* (URL-53). The moderator of this panel was Nora Şeni (ex-director of the IFEA, writer and researcher on the subjects of urban history and anthropology) and debaters were Mimar Sinan Fine Arts University (MSGSÜ) Urban Planning Department professor Güzin Kaya, Architect Korhan Gümüş (also columnist and activist, one of the founders of Taksim Platform), Architect Aykut Köksal (lecturer in different universities), Architect and Cartoonist Tan Oral and Urban Planner Murat Güvenç (lecturer in different universities, chairman of History Foundation). In this panel, Taksim project have been criticized from various point of views. Güzin Kaya objected the project owner being anonymous and even İBB was the responsible organization, it was not possible to find a contact to have any kind of discussion platform about this project. Korhan Gümüş was criticizing the privatization of the public area pointing the new artillery barrack plans and Aykut Köksal stated that even it was a pedestrianization project, the result would be the exclusion of the pedestrians as the square have lost its contacts with surrounding streets. Tan Oral was also concerned about the pedestrians and he was stating that the vehicle traffic and pedestrian routes should met in a healthy way instead of separating each other (URL-53).

While these discussions were continuing, Cultural And Natural Heritage Preservation Board approved the project on January 4, 2012. In the same period, a civil society movement called 'Taksim Platform' was established against the project. The magazine 'Toplumsal Tarih' (Social History) had an interview with Korhan Gümüş, one of the founders of this organization, about the TPP on February 2012 issue. Gümüş (2012) was criticizing the project as it was disconnecting the square from the streets surrounding it and the vehicles losing their relation with pedestrians; people

On March 2, 2012, Taksim Platform got wider and changed its name as 'Taksim Solidarity' with a declaration demanding to stop the TPP (URL-54). The constituents of this organization consist of professional chambers, unions, associations, artists and political parties. The main opposition for this project have been this organization from then on and Taksim Solidarity have organized protests, activities and public statements regularly in order to take attention to TPP's antidemocratic process and potential negative consequences. Various professional chambers also pressed charges against the municipality concerning TPP (URL-55).

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Figure 3.27 : Taksim pedestrianization project of the year 2012 from İBB. (URL-56).



Figure 3.28 : Taksim pedestrianization project of the year 2012 from İBB website. Artillery barrack's façade is on left (URL-56).

Excavations on Cumhuriyet street have begun on October 5, 2012 for the first phase of the TPP, along with the protests (URL-57). Taksim Solidarity organized 'standing' protests on Taksim Square for one month. On December 11, 2012, Artillery barrack project have been cancelled by İstanbul second region Cultural Heritage Protection Board Administration (URL-58). Following this decision of the board, Minister of

Culture and Tourism was unseated from his chair. In February 2013, some arches from Ottoman era have been found during the excavations and those parts of the construction have been paused (URL-58). Meantime several chambers and associations were continuously pressing charges against the municipality. 'Cultural Heritage Protection High Council' confirmed the project with the artillery barrack on February 27, 2013 and when it was April 2013, fifty percent of the first phase had been finished (URL-56) (Figure 3.29).

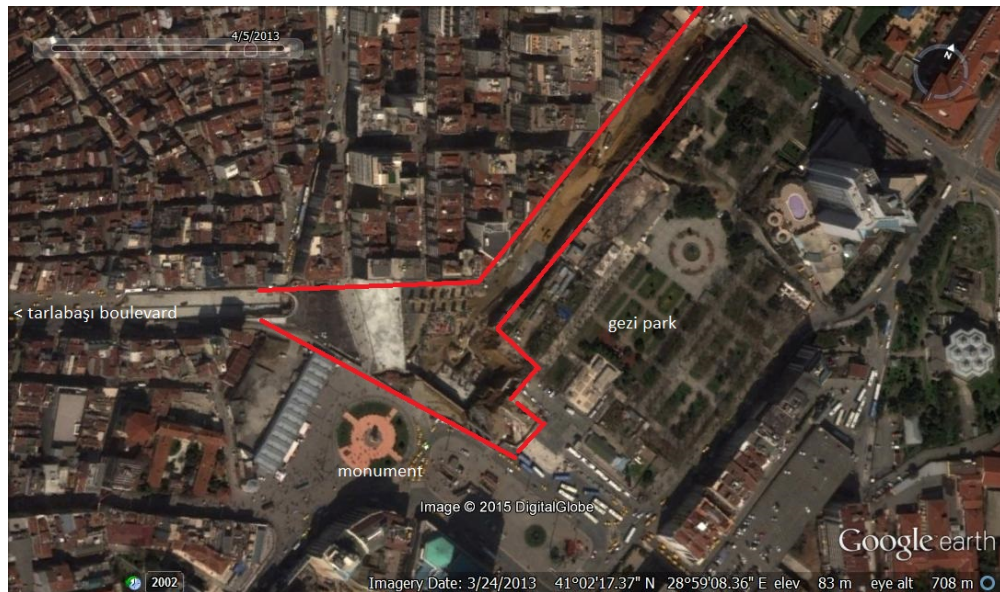


Figure 3.29 : Satellite view of Taksim Square on April 5th, 2013. Excavated area is marked with red borders. Image taken from Google Earth on 17.05.2015.

On May 27, 2013, a wall of Gezi Park facing Divan Hotel had been demolished and after that, Taksim Solidarity convoked volunteered activists to prevent interventions to the park (URL-58). Together with some parliamentary representatives, excavators were stopped until police forces intervene. Police interventions have met with a public backlash first in Taksim and İstanbul, later spreading nationwide. After police forces were withdrawn, on June 2nd, Taksim Solidarity have made a declaration mentioning their critics and demands about the project as follows (URL-59):

'The Taksim Project was first announced by the Prime Minister before the elections. Following this the modification to the plan, presented to the public as a pedestrianization project, was approved by the Istanbul Metropolitan Municipal Council and the Istanbul 2nd District Regional Board for the Preservation of Cultural Heritage. The modification to the project was announced with no regard for the universal values of town planning, without taking into account the science and techniques of transport planning and project design; furthermore it breached the decisions by preservation board and civil chambers... New constructions, illegally added to the modification of the plan in the name of

the restoration of the Military Barracks, are being imposed on the public. Gezi Park, the only green space in the centre of the city ... is being taken from us; ... Taksim as a whole is a protected piece of our cultural heritage and the city's most important public space. We demand that an immediate halt is called on the project, before it becomes an imposed fait accompli. We want Taksim to be developed with a more holistic approach, taking into account its social, historical, communal, cultural and environmental value, and using honest, transparent, participatory and democratic methods that conform to universal models and rules...'

Between 1st and 14th of June 2013, Gezi Park was occupied by civilian organizations and individuals and while the protests were spreading worldwide, negotiations are made between the Solidarity representatives and the government on 13th of June. Taksim Solidarity have made a forum discussion in Gezi Park with the participants and decided to empty the park on 14th of June except the Taksim Solidarity tent. The next day, Gezi Park have been emptied completely and protests related to these events continued until 2nd of July (URL-58).

On 8th of July 2013, İstanbul 1st Administrative Court declared the decision to cancel the TPP and in September 2013, first phase of the project (Cumhuriyet Street Underpass) was completed (URL-58).

In the middle of the year 2014, Taksim Square was remaining as the first phase of the project has been completed. An extensive area with concrete ground is still extending between Tarlabası and Elmadağ streets (Figure 3.30).

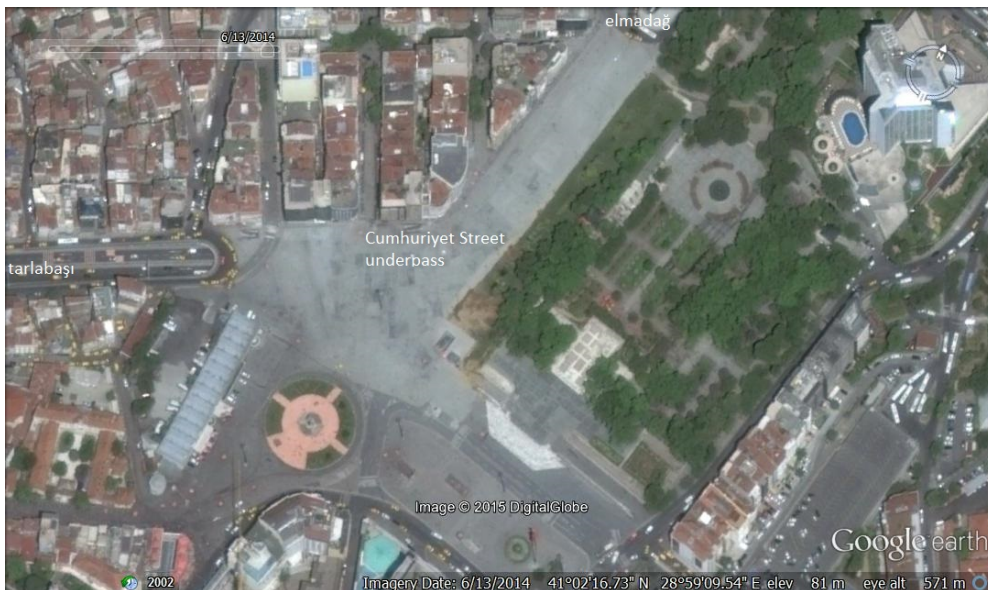


Figure 3.30 : Satellite view of Taksim Square on June 19th, 2014.
Image taken from Google Earth on 17.05.2015.

On September 2014, another renewed project is announced as Taksim Square Regulation Project, which is accepted by İstanbul Second Region Cultural Heritage Protection Board administration (URL-60). This project was focused on mainly landscape planning of the square as it is lack of any definitive arrangements. The construction of this project is planned to start in May 2015 (Figure 3.31) (URL-60).



Figure 3.31 : Latest Taksim Square Regulation project images announced by the municipality (URL-60).

3.3 The Square and The Underpass as an Urban Interior

Taksim Square's current situation is a plain concrete ground without any definition and out of human dimensions; which makes this junction a problematic urban space. Additionally, the square now has a second extensive underground space, the Cumhuriyet Street Underpass, which is serving not only for vehicles but also pedestrians. It includes two bus stops across the underground traffic and a connection to Taksim subway system. These two spaces are connected with vertical circulations on three points and apart from these, there are no spatial connections of any kind between the square and the underpass. On Figure 3.32, underground tunnels for vehicles on Cumhuriyet street can be seen. This plan drawing is explained with a zoning scheme on Figure 3.33.

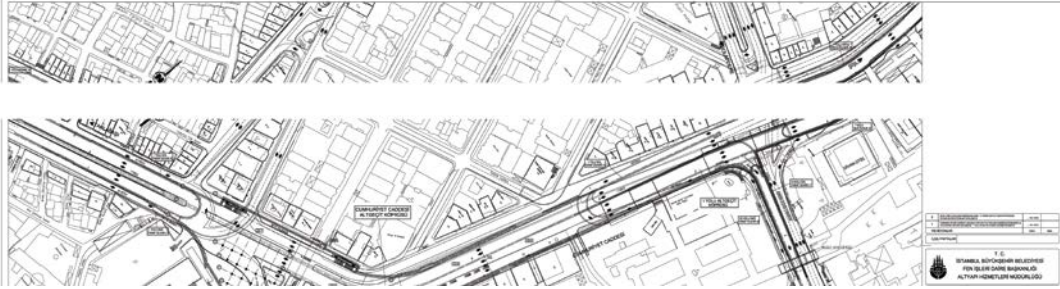


Figure 3.32 : Taksim Pedestrianization Project first phase plan layout. Taken from Transportation Coordination Center (UKOME) of the İBB.

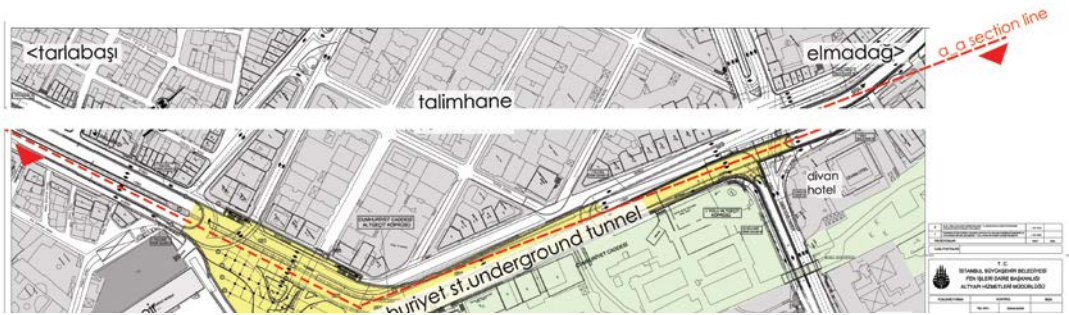


Figure 3.33 : Same plan layout of Figure 3.32 with explanations. The yellow area is the underground tunnel beneath the square and Cumhuriyet Street.

For this thesis' conceptual urban interior project, this underground urban space has been chosen together with the space above on the square. As the interest on this square is focused on its interior aspects, project site is limited with the pedestrian underpass and with the area that is created by underpass plan's extension to the ground surface.

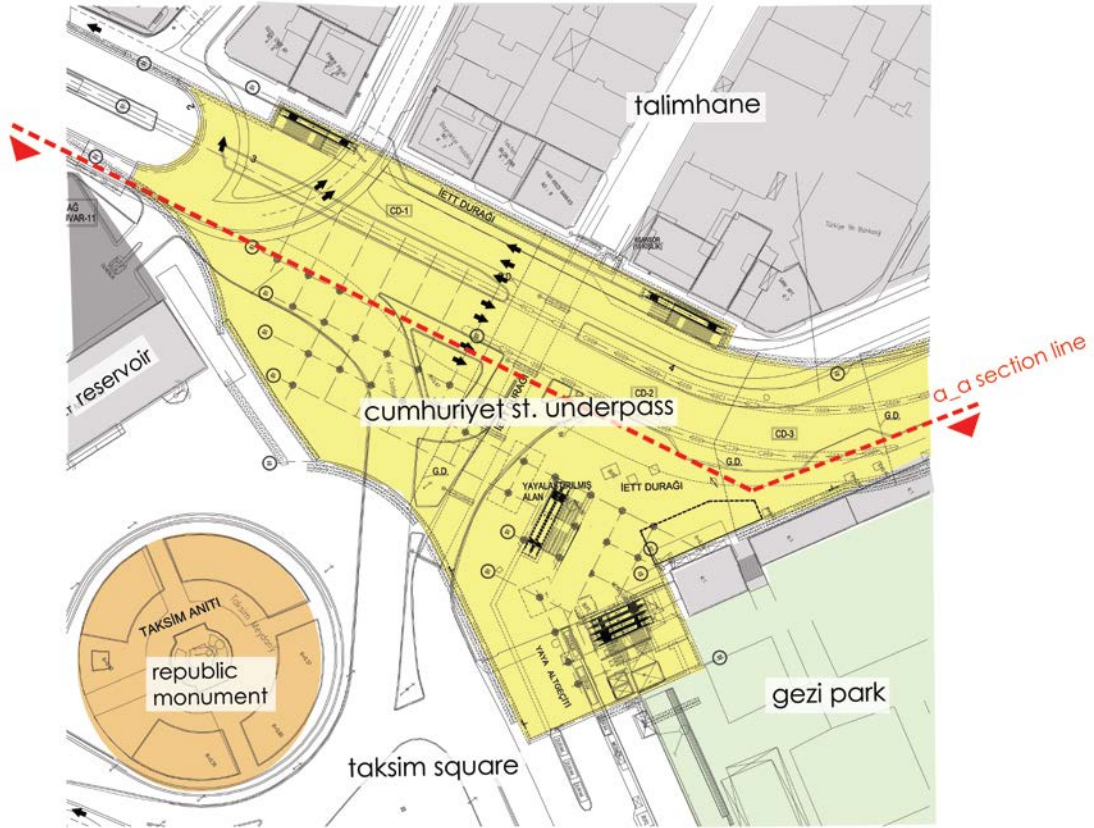


Figure 3.34 : Detailed plan drawing of the pedestrian underpass with vehicle road.

This pedestrian underpass is divided with a vehicle road and it is not possible to cross from one side to another (Figure 3.34). There are only three access points to the underpass for pedestrians from the square; which are marked in Figure 3.35.

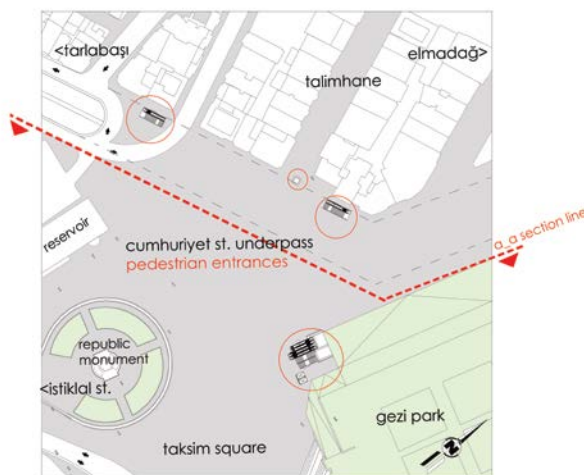


Figure 3.35 : Plan view of the Taksim Square. Pedestrian entrances to the Underpass are marked with red circles.

Total area of the underpass with pedestrian access is approximately 8.230 square meters. There are two bus stops located across the underground vehicle road: one is for Elmadağ direction and one is for Tarlabası direction, without direct pedestrian access between each other below ground surface (Figure 3.36)

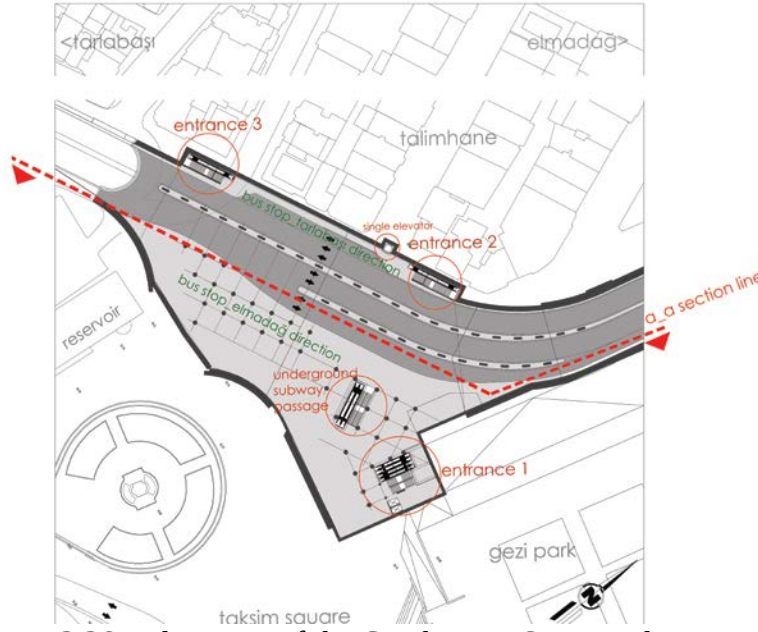


Figure 3.36 : Plan view of the Cumhuriyet Street underpass. Pedestrian entrances to the underpass are marked with red circles and named with numbers.

It can be seen in Figure 3.36 that the bus stop for Elmadağ direction is an extensive underground space, approximately 4800 square meters under a ceiling carried by thirty five columns. The reason for this wide area is the consequence of the abolishment of the following TPP phases. This wide area was planned as an underground vehicle road junction which is connecting to Gümüşsuyu direction in the second phase of the project, however, after the abolishment, this excavated area is finished as an empty underground space. On this side of the underpass, there is also a connection to Taksim subway line.

If the square is to be analysed with a section passing from the Cumhuriyet Street Underpass, the vertical perceptual disconnection of the square and the underpass can be seen more clearly. Ceiling height of the underground space is 6.8 meters and the distance between round columns (column diameter: 1.5 meters) are 6 meters (Figure 3.37, Figure 3.38 and Figure 3.39).

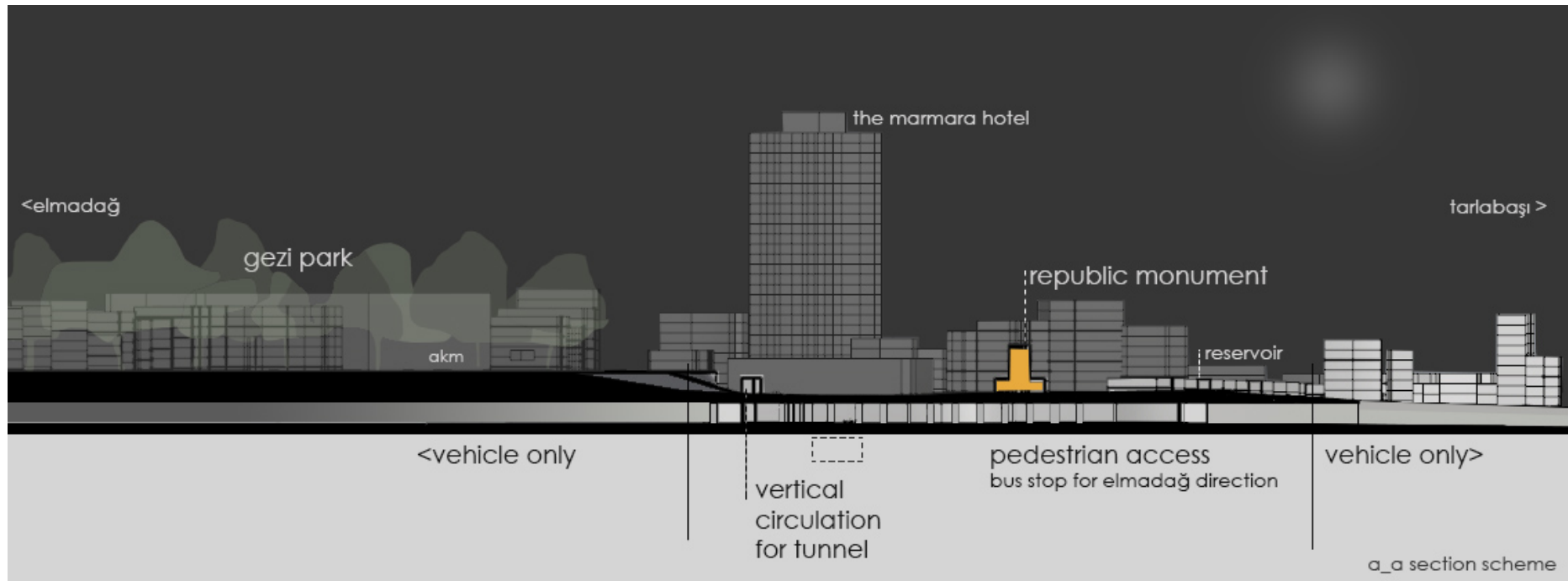


Figure 3.37 : a_a section passing from underpass and Taksim square. The monument and Gezi Park are marked to explain the locations. Ground surface is marked with black intentionally in order to express the disconnection between two overlapping spaces.

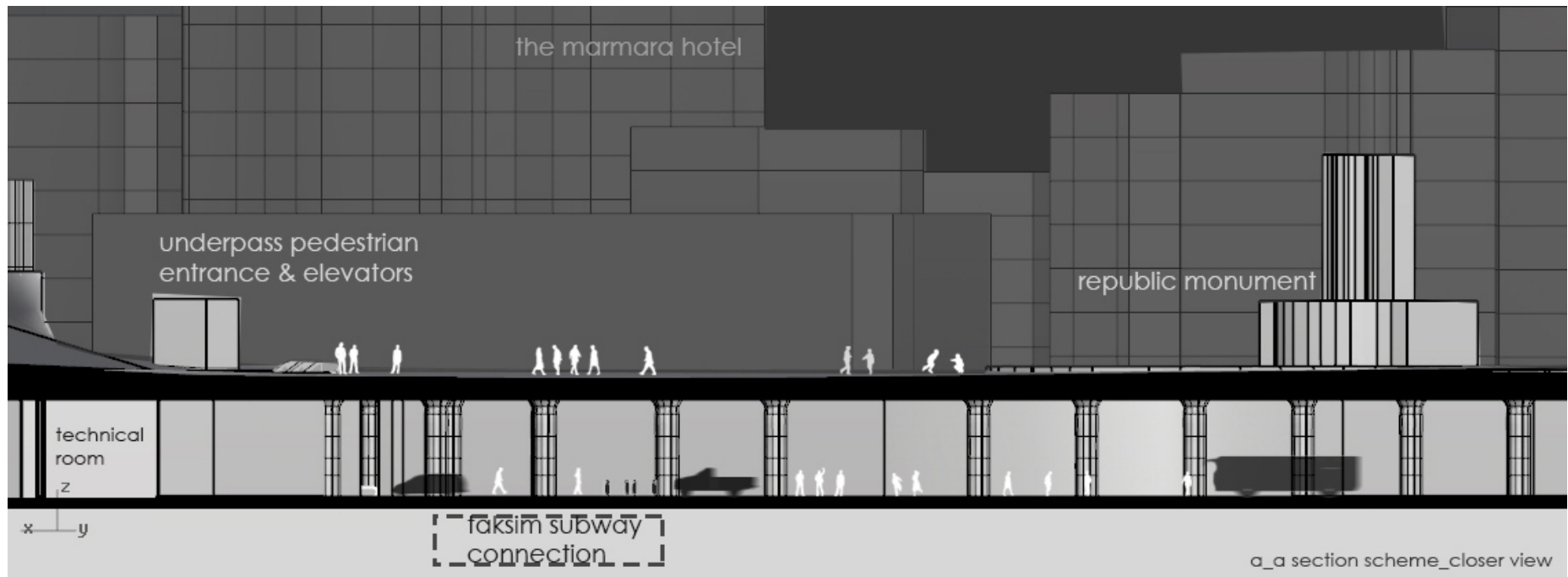


Figure 3.38 : a_a section passing from underpass and Taksim square with a closer view. The monument is marked to explain the location. Section shows interior atmosphere of the underpass with massive columns and extensive and dominant concrete ceiling with its height.

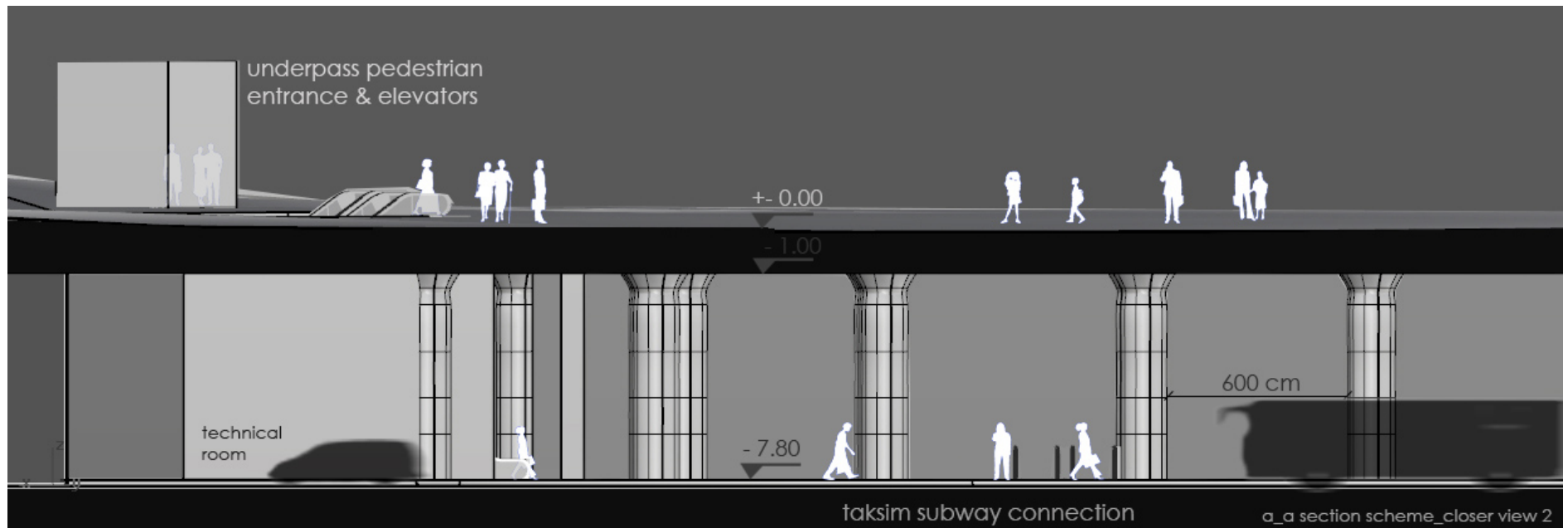


Figure 3.39 : a_a section passing from underpass and Taksim square with detailed view. Section shows elevation differences of ground and underground surfaces with distances between column.

Perspective images are also important to understand these spaces and their correlation. For this purpose, two perspective views of the Square are thought to be useful with a transparent ground surface which can be seen in Figure 3.40 and Figure 3.41.

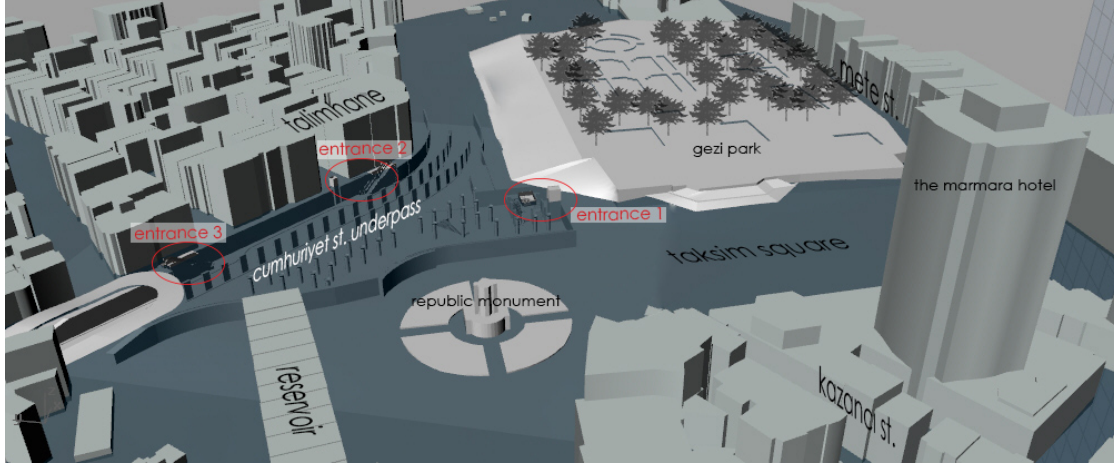


Figure 3.40 : Perspective aerial view of the square with a transparent ground surface from above İstiklal Street.

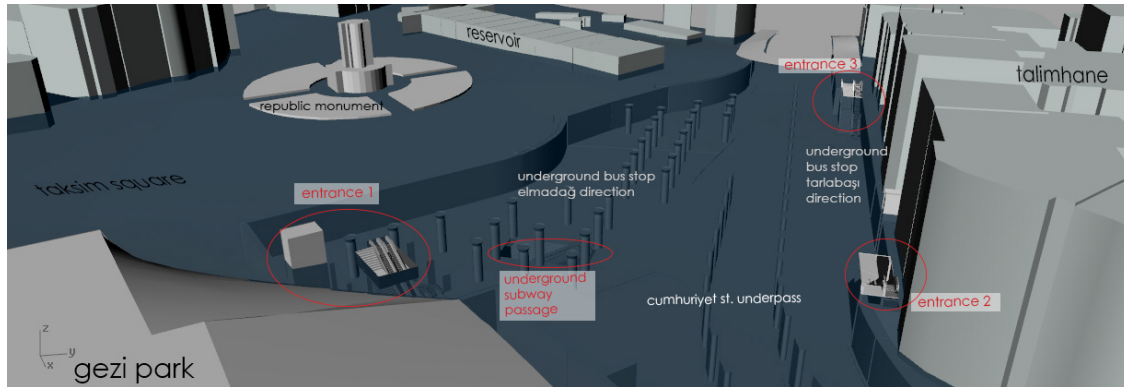


Figure 3.41 : Perspective aerial view of the square with a transparent ground surface from above Gezi Park.

As it is seen in figures above, both spaces on the ground and in the underground are way too broad for human dimensions and they are nearly completely separated with the ground plane. The underpass can be interpreted as a tunnel type of an urban interior, however, its atmosphere is highly insufficient for pedestrians' interior space perception and also it is extremely detached with its surrounding environment. These inadequacies are more salient in the images. The sense of placelessness and lack of spatial definition for both urban spaces can be seen in Figure 3.42, Figure 3.43, Figure 3.44 and Figure 3.45. The concrete ground without any definition gives the impression of placelessness and it is insufficient for urban sensorial stimuli which is

a need for people using that space. This way urban space is dissatisfactory for experiencers.



Figure 3.42 : Taksim Square photograph viewing above the underpass taken from entrance 1 looking towards Tarlabası district.



Figure 3.43 : Taksim square photograph towards Republic monument and The Marmara.



Figure 3.44 : Taksim Cumhuriyet street underpass photograph from entrance 1 showing bus stop area for Elmadağ destination and Taksim Subway line passage.



Figure 3.45 : Taksim Cumhuriyet street underpass photograph from bus stop area for Elmadağ destination.

As it can be observed, this urban interior is lack of any sensorial stimuli that might give a meaning to this area for pedestrians and also it is unrelated with Taksim Square above in any sense. Both wide areas are only have meaning and impression of space with pedestrian movements and sunlighted and shadow areas. There is also lack of any urban elements for an urban experience.

When we look at an image of the square with superposed photographs, we can interpret the pedestrian movements as an urban interior in a constant action (Figure 3.46).



Figure 3.46 : Taksim Square superposed photographs from Gezi Park upper corner. Pedestrian movements and the space they define is expressed with color.

As a conclusion, even these two spaces are left with a problematic urban situation, it is also possible to interpret them as potential urban interior spaces just as it is explained in previous chapters. Aslan (2014) explains this potentiality as follows: *'Taksim's desolateness and placelessness are in fact strong enough to host all contemporary, rationalist and universal formations through interventions'*.

As this thesis is concerned with urban environment in interior scale, these spatial perception and comfort insufficiencies are tried to be answered through an urban interior conceptual design under the following title.

4. TAKSİM SQUARE AND CUMHURİYET STREET UNDERPASS: DESIGN PROPOSAL

An urban interior conceptual project is presented here with an aim to define urban interior according to the previous urban interior assertions and spatial characteristics along with problems of the chosen project site. The methodology and analysis for the proposal are explained with a second subtitle and later the final outcome with its potential effects on the chosen urban spaces.

4.1 Aim

Taksim Square had been explained through its historical morphological development and recent interventions it had together with its urban role and meaning for the citizens. It is consequently argued if Taksim is even a square or not; however as Aslan (2014) explains with an example from its history '*in May Day 1977) a flood of people placed in our urban memory that Taksim is a place rather than a transit area, which is a square defined by the people as a landscape...this factitious 'square' had a meaning with the flood of people, this placeless space gain a meaning with people*'. Construction of the Cumhuriyet Underpass and locating vehicle traffic underground have changed a lot of this vivid urban space into an empty concrete ground surface; undefined and dull. Likewise, the underground space created, have become an ordinary vehicle tunnel, despite the pedestrians are also using this extensive interior intensively in order to access the city buses and Taksim subway line (here it should be noted that even Taksim subway has two other entrances below ground surface, the connection from Cumhuriyet Underpass is a shortcut to the line). These two spaces also brought a potential of emptiness both horizontally and vertically for the utilization of people. If those emptiness are answered with a design solution, it can create an urban interior as a 'place' for citizens.

Aim of the proposal is to create an urban interior in between Cumhuriyet Underpass and Taksim Square through interpreting the ground surface, in order to conceive and

urban spatial meaning on this problematic area. During this endeavor, the statement of Aslan (2014) that *'it is no longer possible to postulate squares as an island. Current squares are experiential areas in metropolis'* is taken into consideration. Through this intervention, several purposes are chosen as mentioned below:

- to improve morphological and sensorial aspects of this dense transit area of Taksim square through interior architectural approach; designing spaces for human body dimensions and sensorial experiences, creating an urban interior that is memorable defining a potential landmark;
- a spatial relation in between ground and underground spaces; creating a vertical interaction;
- to improve the existing urban identity and meaning of the location by enhancing them such as Gezi Park;
- to consider climatic characteristics and events while creating the urban interior, through using them for enriching spatial features and the connection between two overlapped urban space;
- to allow the users of the urban interior to define the space, encourage people to use the spatial configurations spontaneously;

These purposes can be achieved by an urban interior design on these vast spaces of Taksim Square as Grange (1985: 82) states for these kind of 'empty' spaces: *'...the open is not dead, abstract space. In the built environment, the open is that sphere of freedom within which space can be experienced as lived ... the open is an active potential that lets meanings emerge'*. This potentiality is the main goal for designing the urban interior in this thesis, along with building a connection between the ground and the underground. This ground-intersection is recognized as a 'threshold' as Heidegger (1971: 204) states: *'The threshold is the ground-beam that bears the doorway as a whole. It sustains the middle in which the two, the outside and the inside, penetrate each other. The threshold bears the between. What goes out and goes in, in the between, is joined the between's dependability. The dependability of the middle must never yield either way'*. Also Lang (1985: 208) explains these transition places' importance on spatial perception and the feeling of 'being there' through the concept of doorway as follows: *'At a doorway there is an intensification of life; I become truly aware of shifts and turns in life of openings and closings, of*

beginnings and ends. Here, I live my transitions concretely...'. These definitions for intersection between two different environments can be explained visually with a diagram of a threshold of ground and underground intersection. In Figure 4.1, the circles that are representing spatial features of the ground metamorphose into squares; which represent spatial features of underground. 'Cirquares'; however, a third phase of this metamorphosis, they are both circles and squares, both ground and underground spatial characteristics occurring in the intersection of the both environment. In the case study of this thesis, the ground intersection is reconsidered as a threshold between the Taksim Square and the Cumhuriyet Street Underpass and aimed to be designed with an interior architectural design approach by defining the threshold as an urban interior.

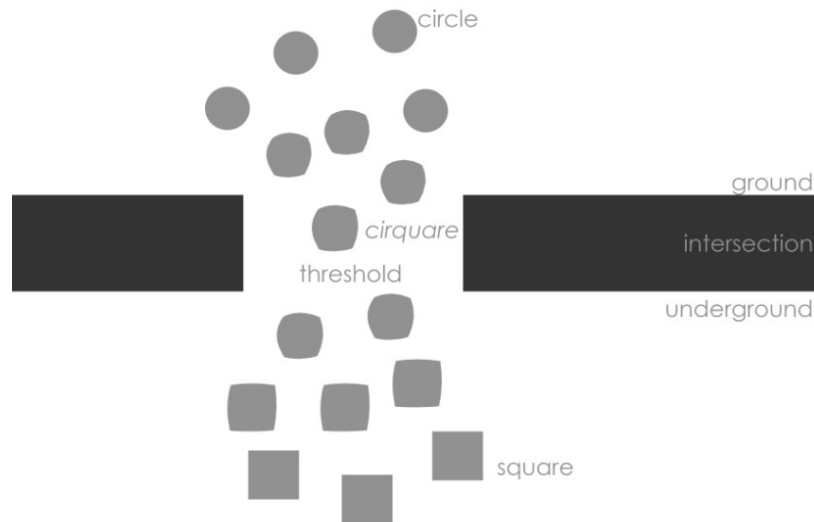


Figure 4.1 : Ground-underground threshold diagram.

In order to achieve these aims, ground surface is considered as a surface which has potentialities for public to emerge meanings through their activities and this surface is thought to be 'semi-permeable' in order to make perceptual connections between ground and underground spaces. This connection is also thought to be giving a spatial meaning to the underpass.

4.2 Analysis and Design Methodology

When Taksim Square has been observed in first glance, as it is mentioned above, pedestrian movements emerge as the dominant characteristics of the studied area. In

order to substantiate changes through time, video recording method has been used, as it is one of the practical way to capture movement.

Timing of the video records are decided according to urban characteristics of Taksim District. Saturday is the most intense day for Taksim as it is mainly used to reach the entertainment and the shopping places such as cinemas, cafes, pubs and night clubs that are located mainly on İstiklal Street. Therefore the Taksim Square is vivid for every hour of the day. Friday is also observed, in order to see the changes in a weekday and evening rush-hour.

For the analysis focusing on pedestrian density and movement on the project site, Friday 27th of June 2014 and 28th of June 2014 are chosen for video recordings. Three videos are recorded for half an hour on each of these days, between the hours 12.00 to 12.30, 18.00 to 18.30 and 20.30 to 21.00. After analyzing the video footages, three of them from Friday recordings are speeded up to create a time-lapse sequence and later these time-lapse videos are superposed with a change of opacity in order to see the frequently used paths by pedestrians (Figure 4.2).



Figure 4.2 : Taksim Square on Friday, 27th June 2014 from Gezi Park upper corner.

These superposed images lead the design methodology into a parametric form finding process for the design proposal of the ground intersection. Two main changes through time was coming to forefront in these observations; pedestrian movements and daylight/shadow translocations. Pedestrian movements are taken as the dominant parameters for the form of the ground intersection, as the concept of 'urban interior' is defined mainly through human body, its dimensions and perceptions in space. Thus, the pedestrians bodies and their movements on Taksim Square are studied as principal form finding parameters.

In order to get the pedestrian movements as form finding parameters, *Grasshopper* plug-in program in *Rhinoceros* 3D modeling software is used as a tool. A simulation

of pedestrian movements on Taksim Square has been made with agents and primary movement behaviors by Grasshopper components (Figure 4.3).

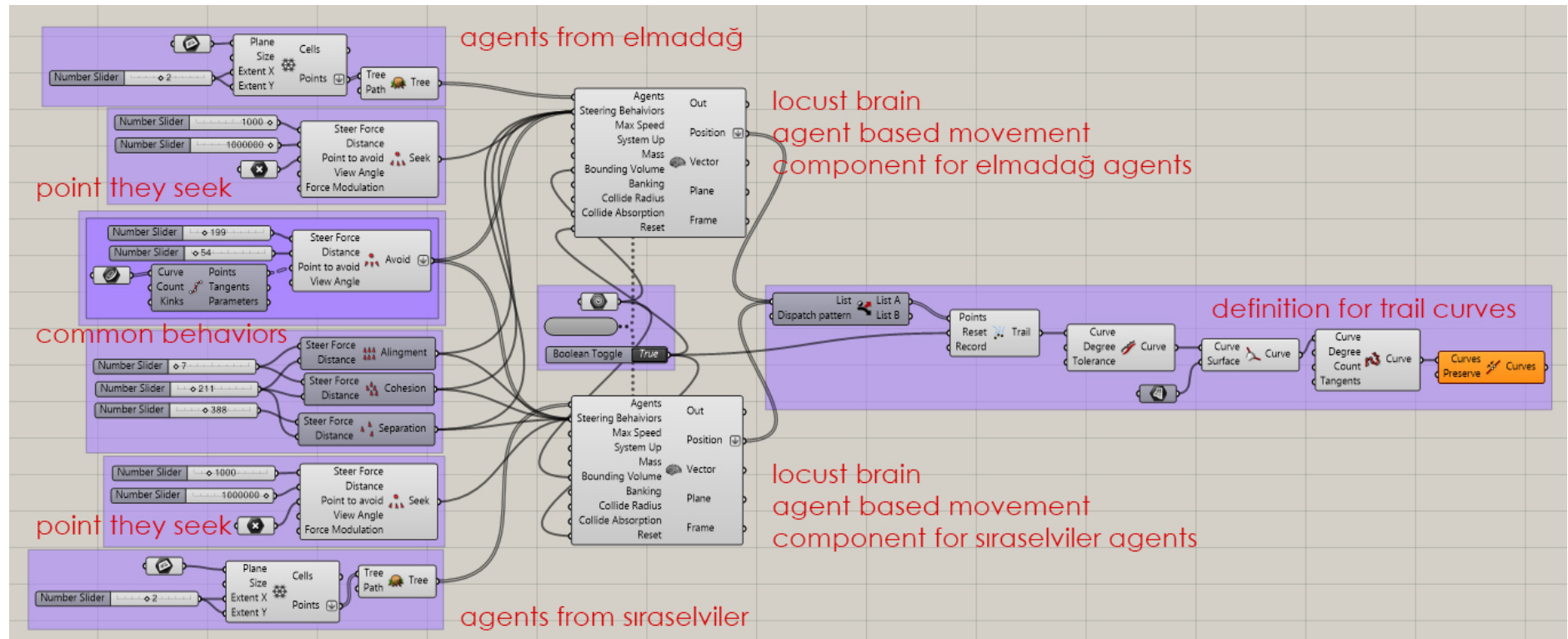


Figure 4.3 : Definition screenshot from Rhinoceros 3D software's Grasshopper plug-in which is used to create a pedestrian movement simulation on Taksim Square plan.

Simulations are made with two groups of agents consist of four agents in each. One group's starting point was Elmadağ direction and other's was Siraselviler direction. These groups are assigned to reach a destination point in order to begin the movement. Each group had to have their own behavioral component called *locust brain*. both brains are connected to same behavioral parameters in order to get the same results from every agent. Common behaviors are called as *alignment*, *cohesion*, *separation* and *avoid*. Avoid behavior was an important part of the simulation, as this component was restraining agents to move towards buildings and other barriers in three dimensions. The main difficulty while making this simulation was creating the balance between seeking force and avoiding force, as they inhibit each other in every different scenarios. The result of this Grasshopper definition can be seen in Figure 4.4 and Figure 4.5.

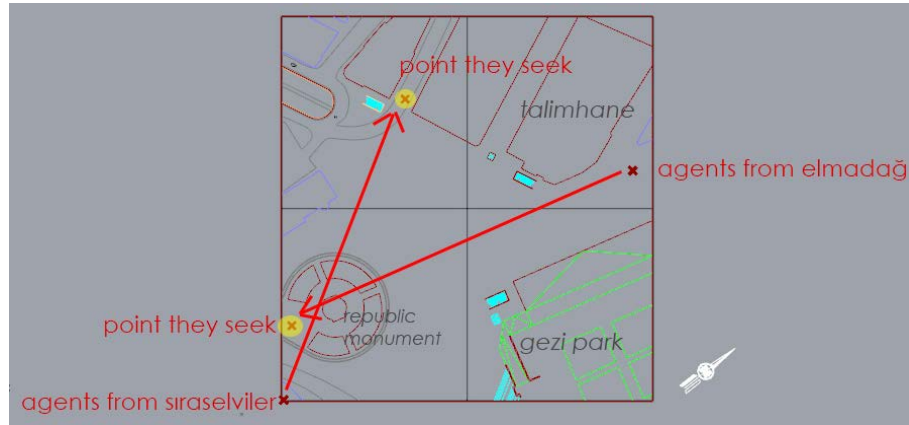


Figure 4.4 : Rhinoceros 3D software screenshot from plan view at the beginning stage of the Grasshopper simulation.

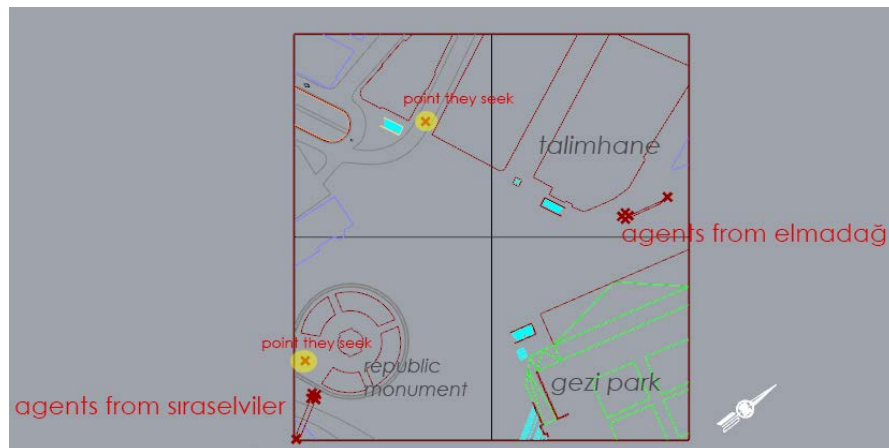


Figure 4.5 : Rhinoceros 3D software screenshot from plan view during the running of Grasshopper simulation.

Since the computer used for this simulation was crashing because of hardware inadequacies, the simulation is repeated for several times with different scenarios for agents' start point and seeking point locations while keeping them as similar as pedestrian movements in video recordings of the square. Each simulation had minor lapses that could be ruled out. Traces are collected separately for each scenario as in Figure 4.6.

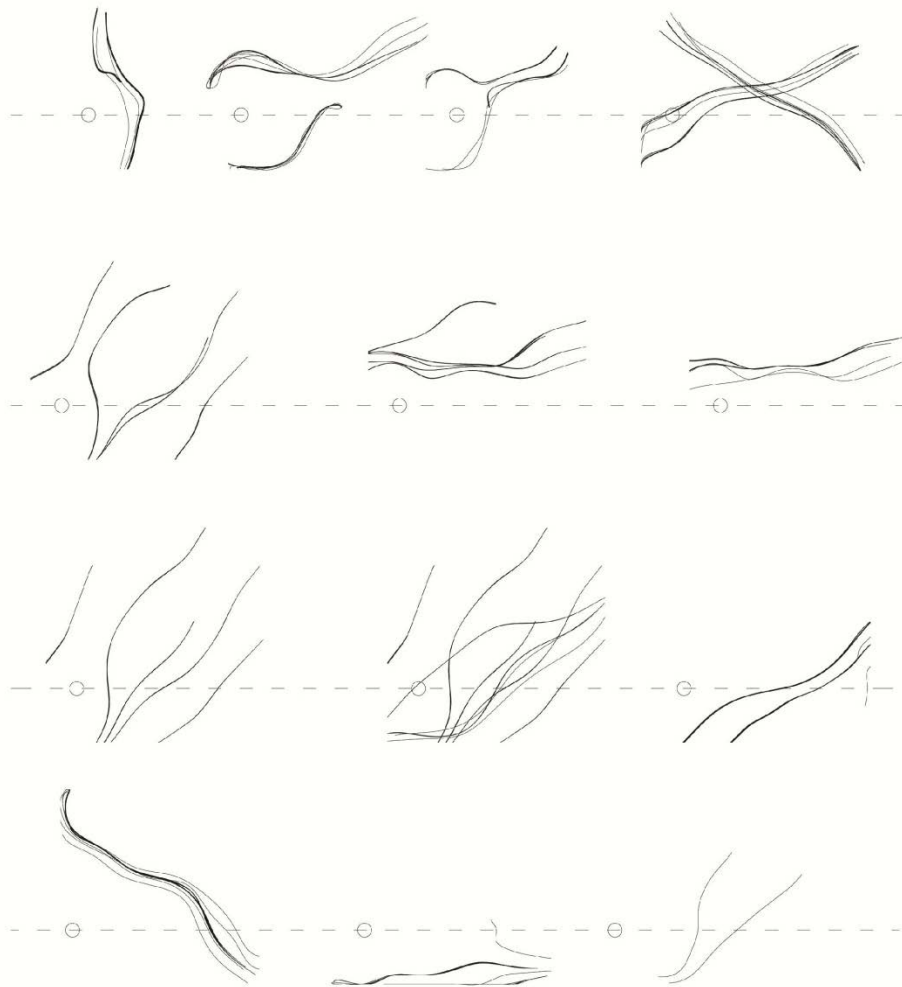


Figure 4.6 : Agents' traces for thirteen simulation scenarios. Circles are representing Taksim Republic Monument.

Later, these scenarios' traces are superposed all together and placed to Taksim Square plan with Republic Monument as a reference point (Figure 4.7 and Figure 4.8).

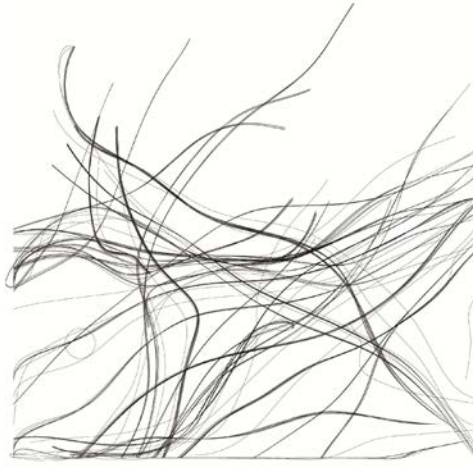


Figure 4.7 : All agent traces are superposed. Circle is representing Taksim Republic Monument.

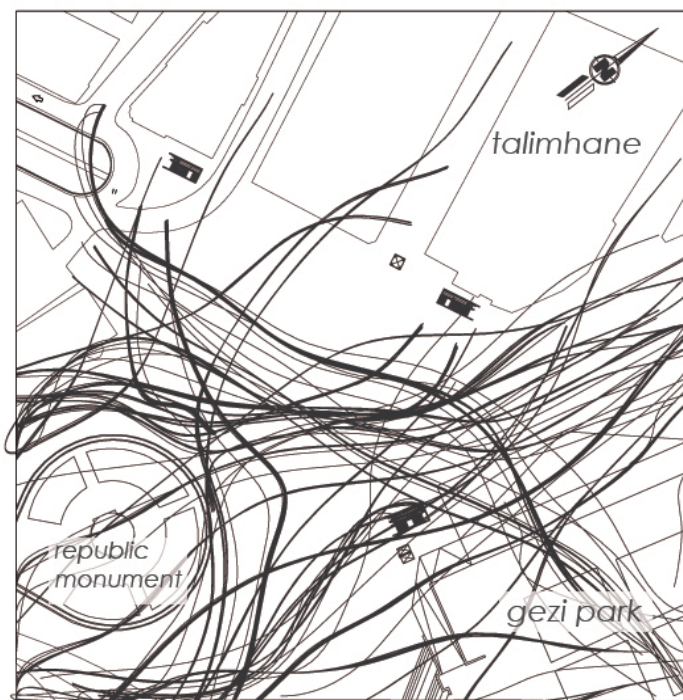


Figure 4.8 : All agent traces are placed on Taksim Square plan.

These curve traces defined the basis of the ground intersections' plan scheme after their numbers are reduced, leaving main paths and then trimming around the underpass' borders below the ground surface (Figure 4.9).

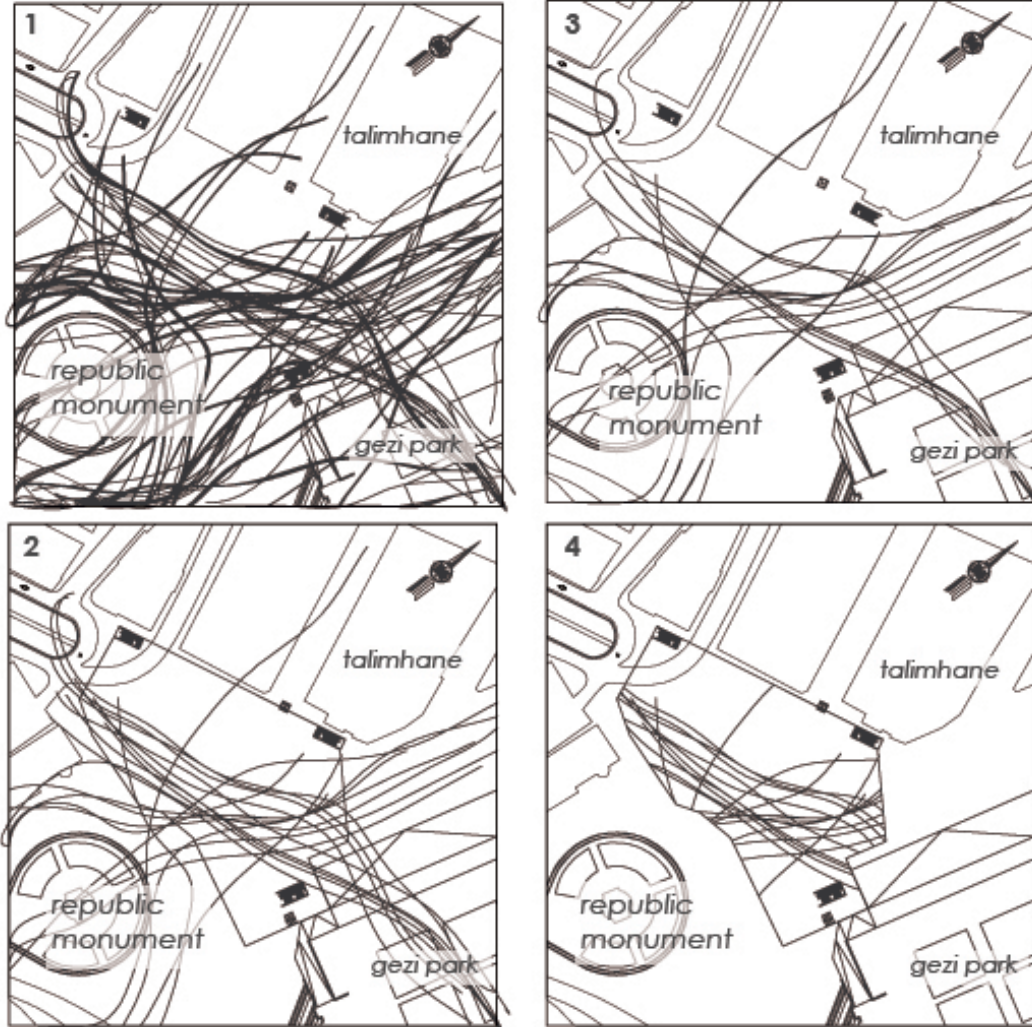


Figure 4.9 : Trace number reducing steps to emphasize main pedestrian paths and trimming the extensions from Cumhuriyet Street Underpass borders on 4.

These trimmed curves on the square plan are used for plan and location of the urban interior form with a process explained under design proposal title. In order to define height and formation in third dimension, these curves are interpreted on z coordinate according to sunlight and shadow translocation analysis. The shadow movements are analyzed in Rhinoceros 3D software by setting the sun location and intensity for İstanbul (Figure 4.10). For climatic conditions, 16th August has been chosen as average highest temperature is on August for İstanbul with 29 centigrade degrees. (URL-61). This climatic condition is taken as a definitive parameter for the third

dimension of the urban interior form as wide concrete ground surface of Taksim Square is highly uncomfortable in a humid İstanbul summer day.

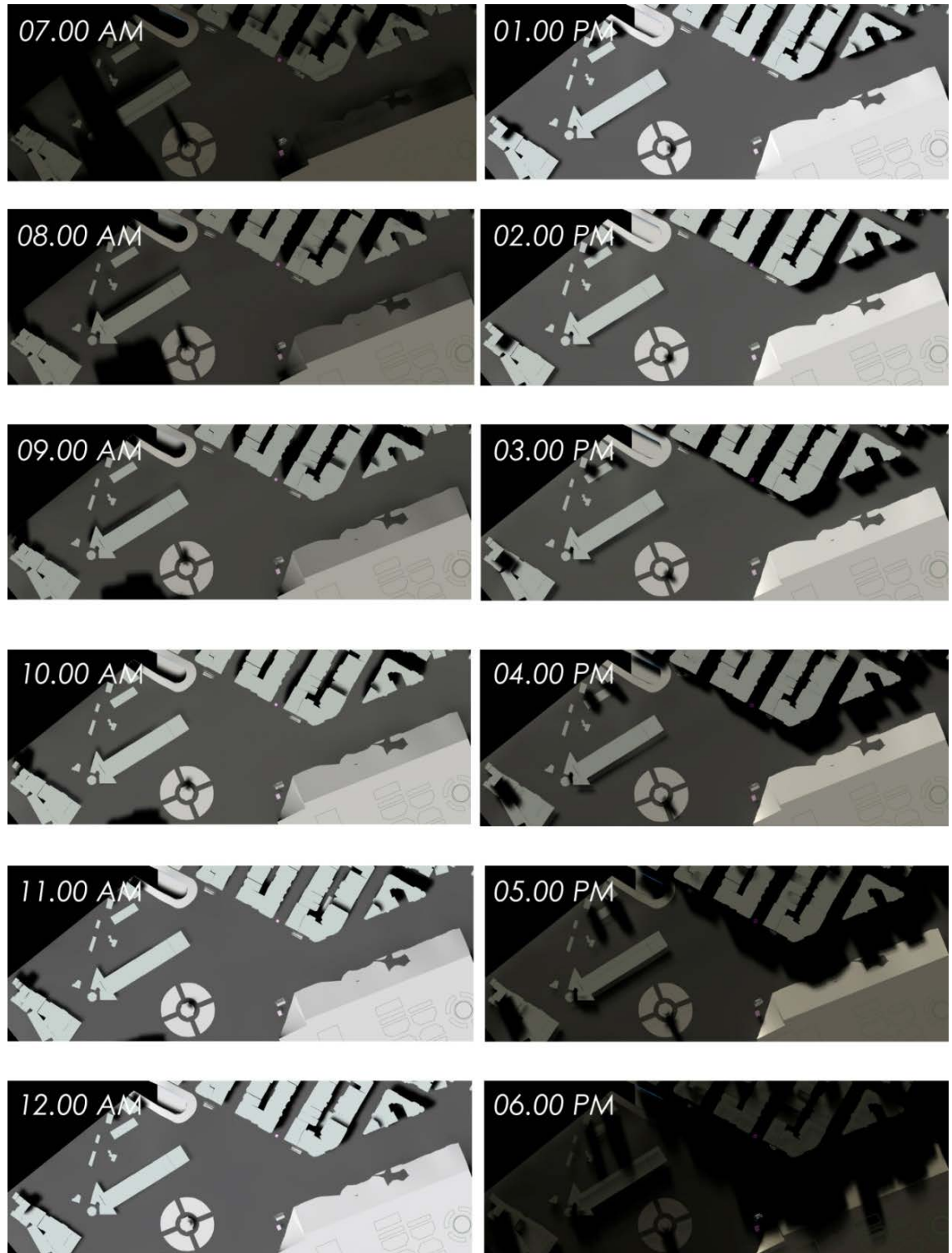


Figure 4.10 : Shadow movements on Taksim Square on 16th of August according to Rhinoceros Sun Location Settings.

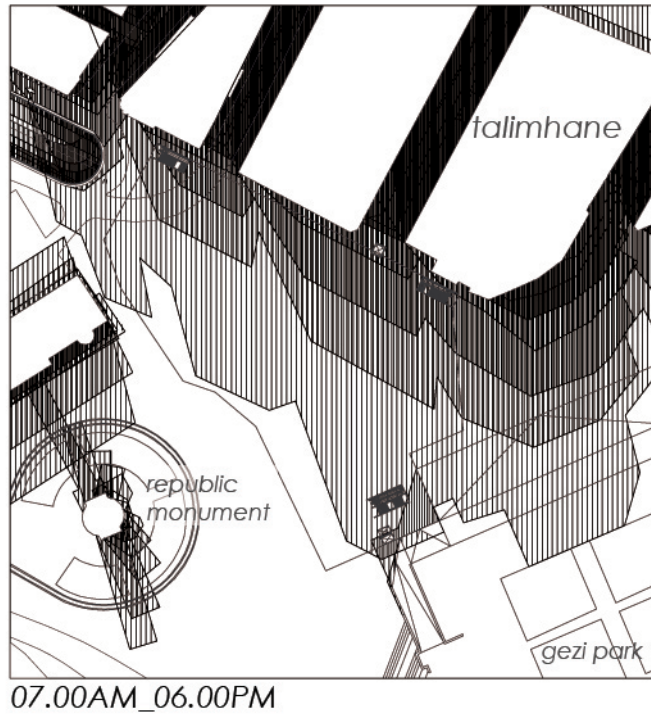


Figure 4.11 : Superposed shadow movements on Taksim Square on 16th of August .

As it can be seen on Figure 4.11, daylight control is an important problem above Cumhuriyet underpass as there are no surfaces that can be used as canopies. In order to define urban interiors as it is mentioned in previous chapters, sunlight and shadow are essential urban interior 'boundary' elements.

The analysis explained under this title are used for design proposal's formation and other design decisions which are explained on the next chapter.

4.3 Design Proposal

The first step of design has began with defining the plan scheme according to pedestrian traces. As these traces are reduced and trimmed in order to have a precise formation above underground space, they are also interpreted by their main directivities and used as 'spines' of the ground intersections of the form that would be located to Taksim Square. This process is explained with three steps: firstly, locating the pedestrian traces to square plan and trimming them in order to fit between the border projections of the underpass.

Second phase was interpreting these traces according to their main directions and last stage was defining the urban form's boundaries and defining their relation with the environment. These steps are explained visually in Figure 4.12.

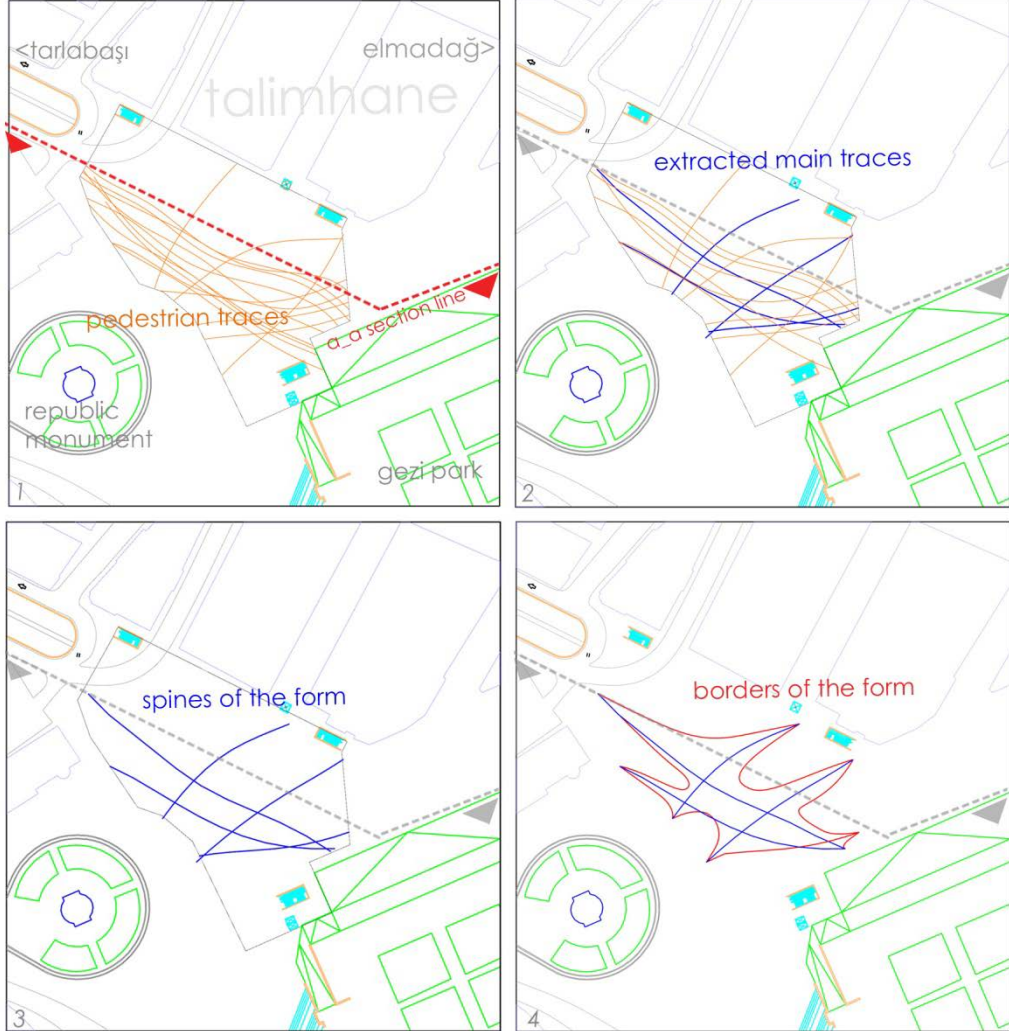


Figure 4.12 : First four phases of the design process shown on Taksim Square plan.

Following the plan scheme, third dimension of the designed form has to be decided. In order to define the heights and three dimensional surfaces, spinal curves are elevated according to their intersection points and sunlight-shadow analysis of the square. During the elevation, human body dimensions and the sense of urban interior are taken into consideration. Heights are shown with dimensions on the spinal curves in Figure 4.13.

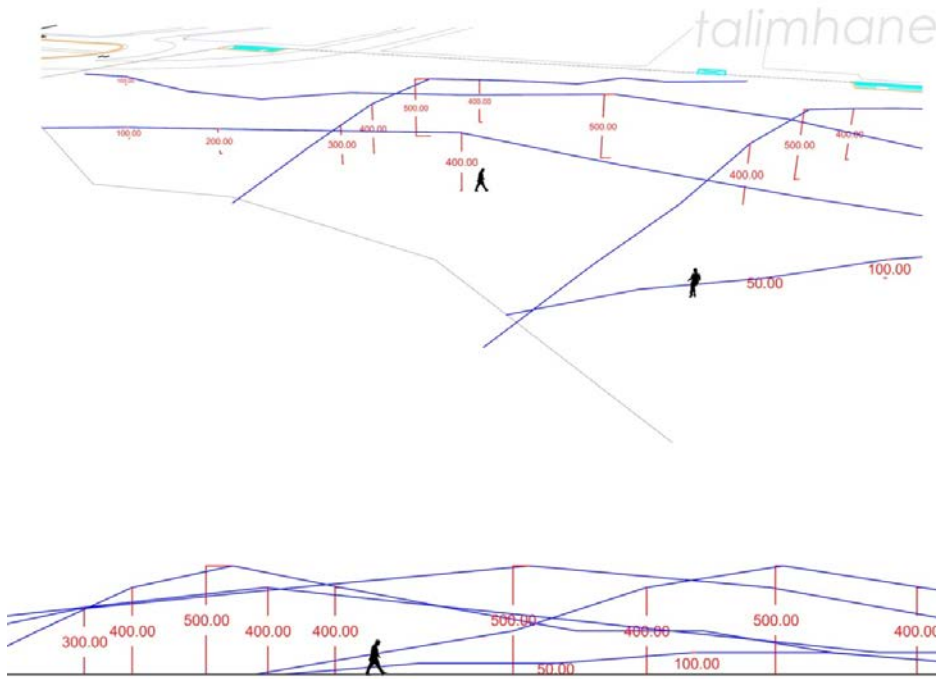


Figure 4.13 : Elevated spinal curves and their vertical dimensions.

Following the decision of heights, three dimensional surfaces are built between spinal curves and borders. In order to prevent the restrain main pedestrian paths, four openings are made below the highest parts of the form as shown in Figure 4.14.

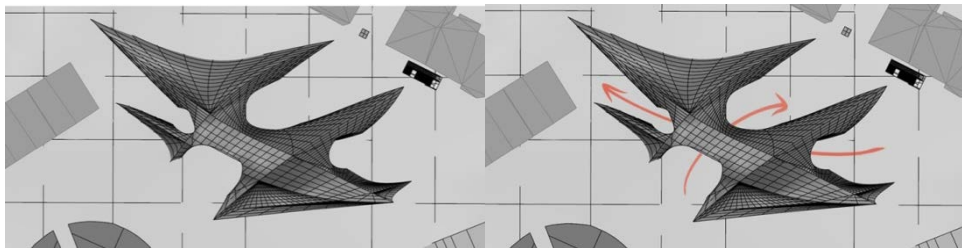


Figure 4.14 : Plan view of three dimensional form on left and the arrows are representing circulation accessibility below the form on right.

Next phase of the design process was to decide the surface characteristics according to their potentialities that pedestrians would use for. In order to make this decision, a zoning scheme is prepared as shown in Figure 4.15. Yellow area is for multi-purpose usage with a surface slope which people can climb on. Green areas are circulation areas and blue areas are where openings are thought to create a connection between the square and the underpass especially by sunlight and weather changes.

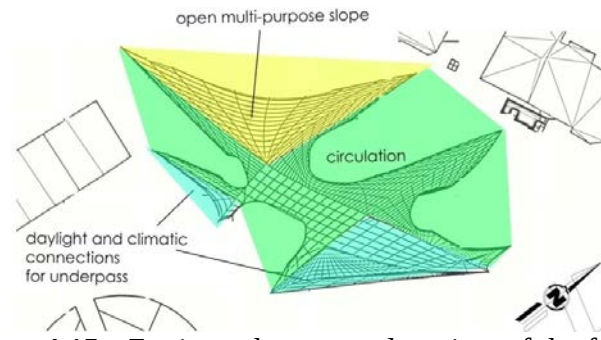


Figure 4.15 : Zoning scheme on plan view of the form.

The zoning scheme above is decided according to climatic conditions of İstanbul and shadow-daylight translocations as mentioned in previous analysis chapter. It is aimed to let the sunlight enter the underpass with openings both on form's surface and ground surface, thus, these openings are located towards east. Open space usages are thought to be located on west surface as those areas of the square are mostly shadowed by Talimhane apartments even in August.

Concerning new formation proposed with the designed form, underpass entrance 1 is moved below the form and wide space below underground gained a circulation purpose. Two other ground openings are made on the ceiling of underpass in order to make sensorial connections stronger between ground and underground (Figure 4.16).

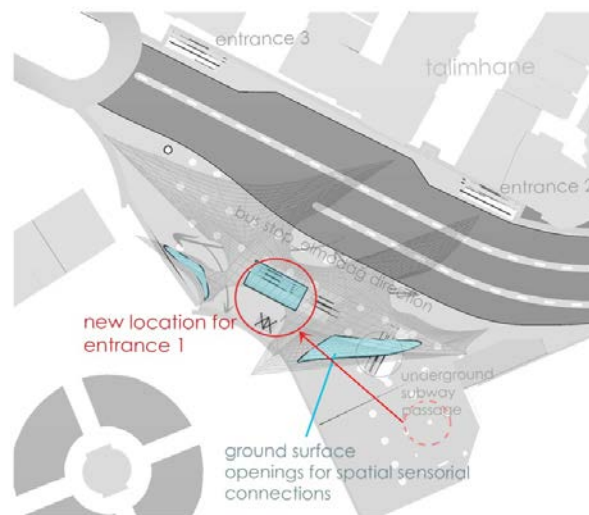


Figure 4.16 : Plan scheme of the square with the underpass bus stop.

In favor of making sensorial connections more intense, a pattern is applied on east surfaces of the form. This pattern is used for additional openings on these surfaces, creating light and shadow patterns both on ground and underpass. These openings let sunlight, rain, snow and other weather events pass through ground surface and reach underpass (Figure 4.17). A physical model in 1:500 scale is made in order to explain the form and its spatial effects with the light (Figure 4.18).

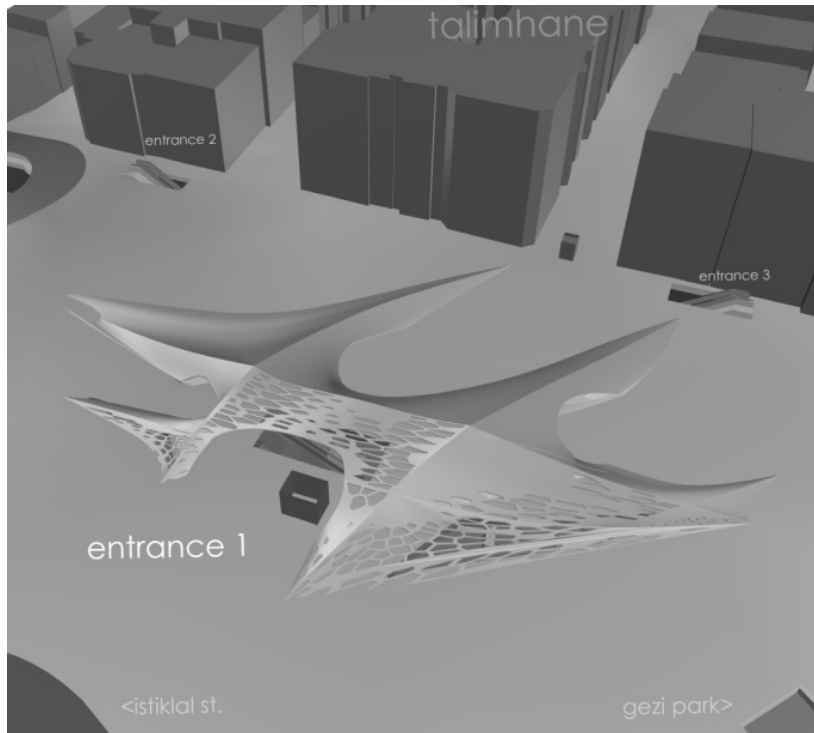


Figure 4.17 : Final situation of the form and square with openings and new entrance location.



Figure 4.18 : Physical model in 1:500 scale made with 3D printer.

Sensorial connection between ground and underground spaces can be explained with a section passing through the underpass, form and ground openings similar to the section a-a in previous plan schemes (Figure 4.19).



Figure 4.19 : Section view of the form, Taksim Square and Cumhuriyet Street underpass.

As it is common for people to move towards the source of light when they are in an underground space, daylight is used for orientation purposes below the ground as much as sensorial richness of the urban interior.

Materials and coverings of the form is also as crucial as the form itself for interior architecture scaled design. For this reason, materials are chosen according to their tactile characteristics, as well as their visual aspects. A covering material named 'covercrete' is preferred for most of the surfaces of the form. This material is a spray-on coating which is suitable for concrete surfaces and it is also known as slip and abrasion resistant, textured and durable with variety of colors. Grey covercrete is chosen as it is highly suitable for an urban surface, intriguing with its texture for tactile senses and also giving the impression that the form is emanating from the concrete ground surface of the Square. Vegetations as grass coverings on multi-

purpose surfaces and circulation areas are also used to invite passer-by people to climb, sit or lay down on the form (Figure 4.24). These surfaces are also thought to be intriguing for both tactile and olfactive senses.

The underpass is connected through a sensorial phenomena not only by daylight and its visual and tactile (sunlight heating) aspects, but also with different weather conditions that happen on Taksim Square throughout a year. It is assumed that rain and snow will be able to enter the underground interior space through ground surface openings; creating tactile, olfactive and auditorial phenomena for people using the bus stop and subway line connection. In rainy days, a white noise will occur in the underpass space, which is effective to block traffic noise enough to make the space relatively comfortable. Also sunlighted areas' locations will be changing from morning until evening, giving the sensorial information of time changes; working like a gnomon¹.



Figure 4.20 : A perspective view from underpass bus stop for Elmadağ direction.

1 gnomon: The projecting piece on a sundial that shows the time by the position of its shadow.

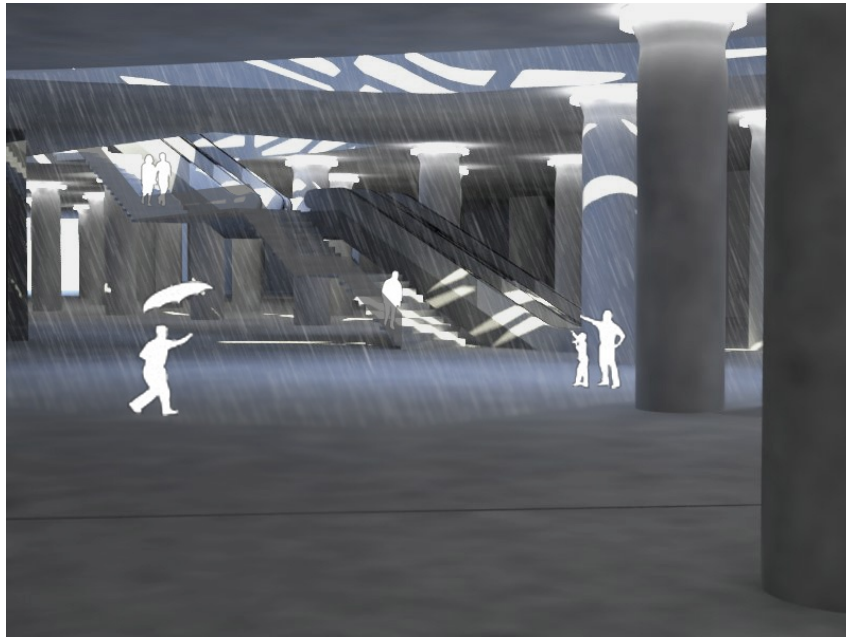


Figure 4.21 : Perspective view of the underpass entrance 1.

Weather events such as rain can be experienced below the ground, both richening the urban interior sensorially and making the spatial connection between ground and underground spaces (Figure 4.21). The sunlight patterns are revealing themselves both on ground and underground and acting as a landmark in both spaces. Grass coverings are thought to be inviting for people to get in touch with the form through their bodies (Figure 4.22).

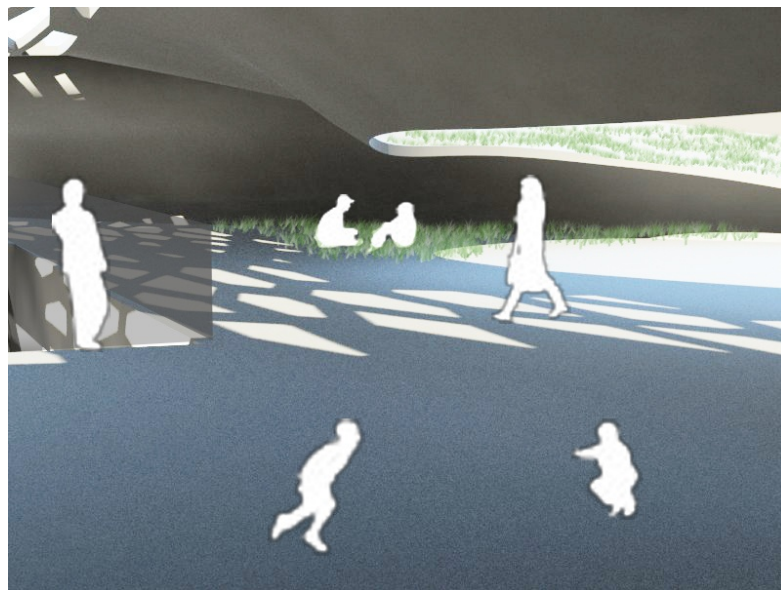


Figure 4.22 : Perspective view from the space under the form. On left, underpass entrance 1 can be seen.

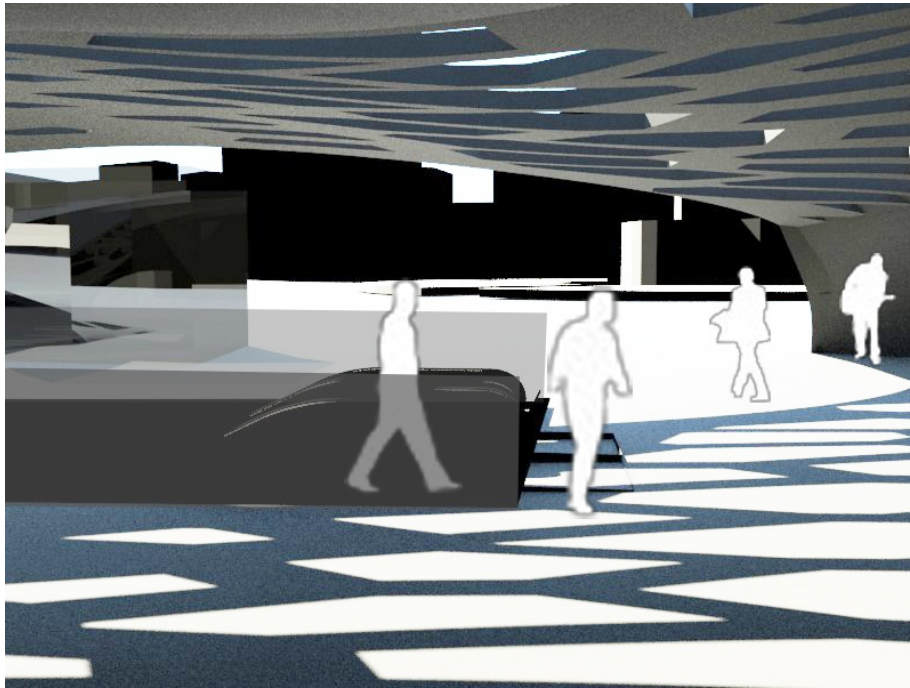


Figure 4.23 : Perspective view from under the form t towards Republic Monument showing entrance 1 from Taksim Square.

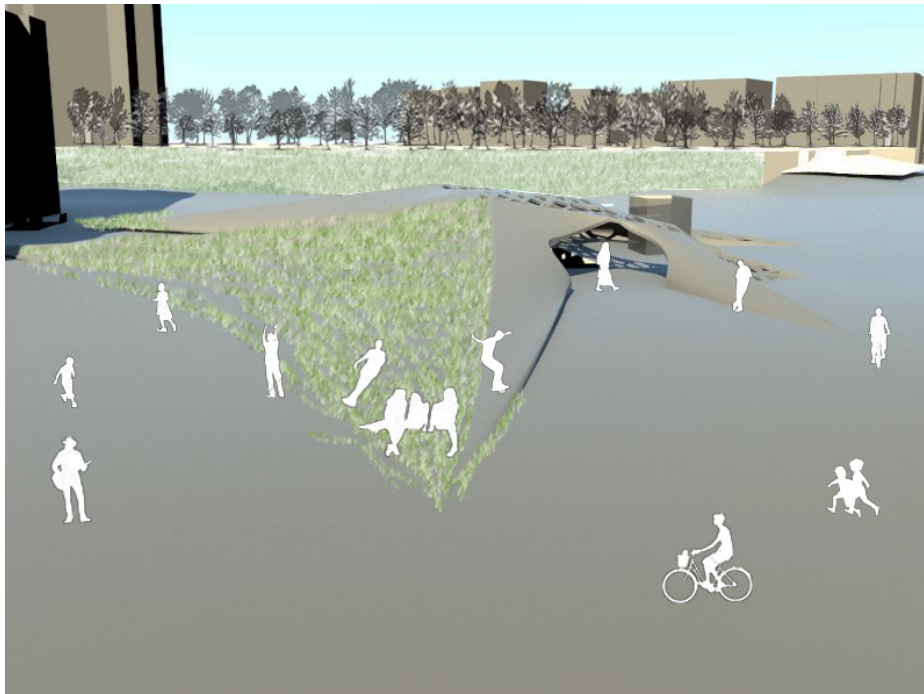


Figure 4.24 : Aerial perspective of the form. Grass covered surface is also emphasizing the connection between Gezi Park.

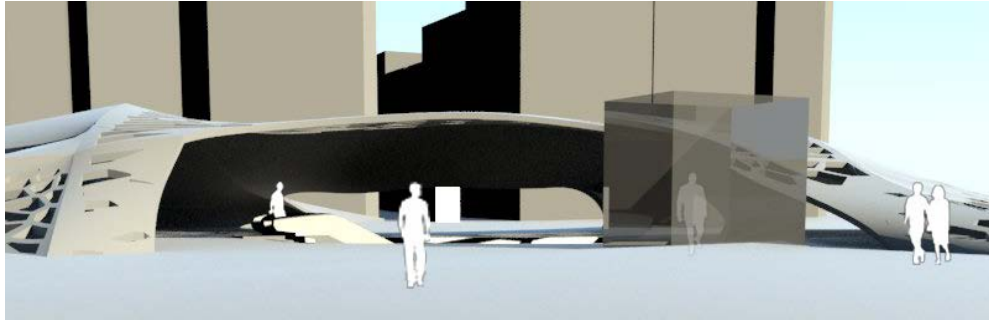


Figure 4.25 : Perspective view from Taksim Square, elevators and entrance 1 escalators under the form can be seen.

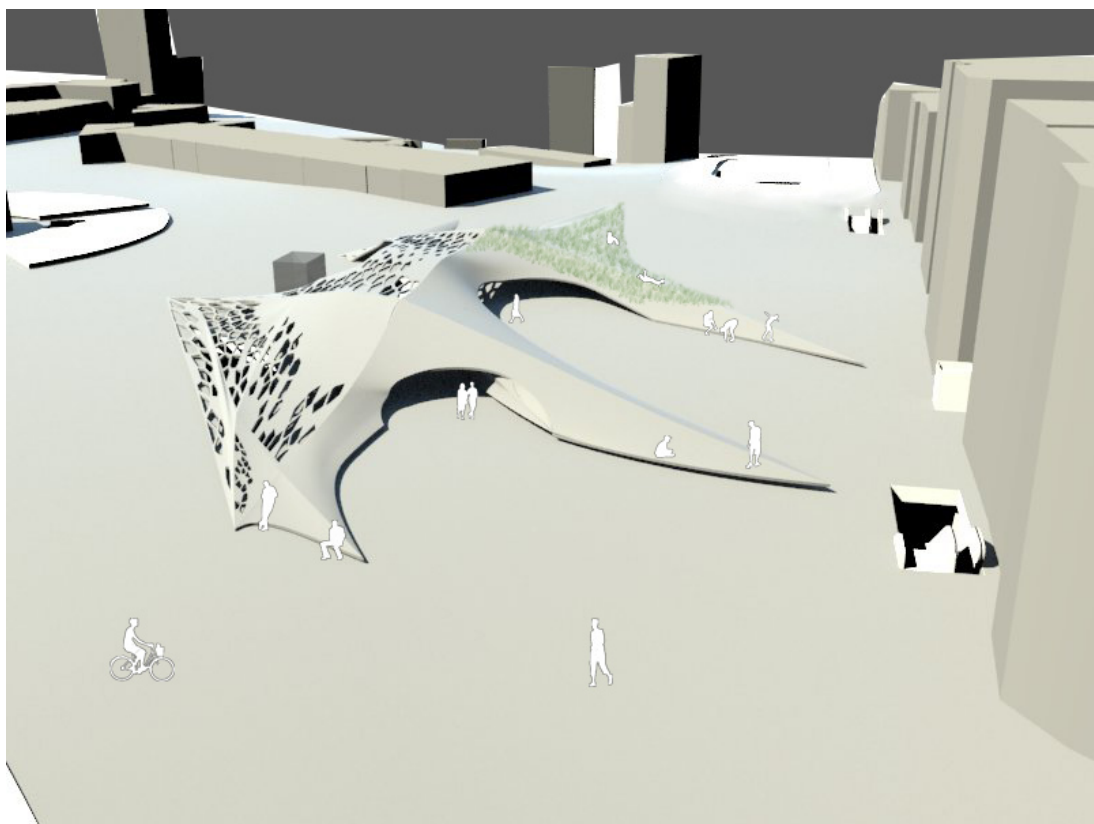


Figure 4.26 : Aerial view from Talimhane towards Taksim Square with the form. Republic Monument on left and reservoir at the background.

As a conclusion of this conceptual proposal on Taksim Square, aims previously mentioned in analysis chapter are achieved. Creating a memorable space and a potential landmark, having a vertical interaction between ground and underground spaces with spatial relations, improving existing urban identities like Gezi Park, using climatic characteristics and weather events in order to enrich the sensorial aspects of both ground and underground urban interiors were the primary goals. Another future prediction of this conceptual project was to allow people to define the

space and encourage them to interact with urban interiors, which is crucial for any urban environment.

5. CONCLUSIONS

The urban interior study in this thesis have began with the questions arose from the chosen location. The dissertation have been built around the project site, which is Taksim Square and the Underpass. During the studies and analysis held for this thesis, 'urban interior' term have been investigated and the spatial problematics of the site (human scale problem, perception and spatial atmosphere inadequacies etc.) lead the study into a research on urban interior definitions within these subjects. Thus, the urban interior theory and conceptual design practice was interconnected through all the process.

The semi-parametric form that has been designed for Taksim Square and the Underpass' intersection is thought to be an example on how interior architectural design can enrich spatial configurations which are considered as out of the interior design field. This conceptual urban interior creates a memorable landmark and a human-scaled comfort zone in the middle of the desolated Taksim Square.

The use of parametric design methodologies for the conceptual urban interior design made it possible to analyze the site both qualitatively and quantitatively. However, these methodologies are usually lack of the sensorial aspects of the space as Holl, Pallasmaa and Perez-Gomez states: *'... "multiple-perspectives" approach to urban planning is facilitated by using the computer in the design process to find precise pan dimensions within perspectival views, and to test speed, angles of motion, and peripheral vision. However the pixelated digitized cannot simulate qualities of material, light and other sensations of full-scale urban experience'* (1994: 134). On the other hand, it should be kept in mind that with this speed of technological developments; it is not so far to reach the digital simulation of actual 'feelings'.

This topographical intervention to Taksim may be used as an exhibition surface, a concert stage, a picnic table or a skateboard parkour. All these usage scenarios are possible and available to the public for twenty-four hours a day. It is believed that urban interior design ideas like the one for Taksim Square can bring the questions

and answers to how the urban environment can be built by public spaces that are democratic and open to possibilities.

As a conclusion, it should be stated that keeping the mind open for contingences between other design fields and disciplines is always fructuous for both sides and it should be encouraged in every possibility. And as architectural design fields are the ones shaping human habitat, they should be considering human perception in every scale, as Holl (1994) states: *'By taking perception as a model for architectural thought, a student of architecture (which I strive to be) struggles to become a seer. The art of seeing brings a certain joy in engaging the revealing of the world. Yet it remains in our "perspective" from which we form our own visions'.*

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