

# Visual Analysis of Picturesque Urban Landscape Case of Sultanahmet, Istanbul

\* <sup>1</sup> SAIDU Dalhat Dansadau, <sup>2</sup> Prof. Dr. Aykut KARAMAN

<sup>1</sup> & <sup>2</sup> Department of Architecture, Altınbaş University, Istanbul, Türkiye

E-mail <sup>1</sup>: dalhatdansadau@gmail.com , E-mail <sup>2</sup>: a.aykut.karaman@altinbas.edu.tr

## Abstract

The integration of photography into architecture was a pivotal point in the journey of architectural representation, photography proved itself useful for the betterment of architecture early on, as well as establish itself as a necessary tool in the realm of architecture, from the early interactions of Le Corbusier and photography to the emergence of early architectural photographers such as Ackerman J.S., Shulman J, this thesis explores the evolution of architectural photography and draws parallels between architecture, photography and urban design specifically addressing perception. The main study this paper was extracted from looked into the inquiry of knowing "What are the key picturesque locations/structures in Sultanahmet, Fatih – Istanbul, and how can their spatial distribution, and cultural significance be characterized and mapped for urban design and development?" as well as the secondary objective, of which this paper focuses on, is to "Investigate the role of perception in urban environments and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque structures/locations". The study achieved these objectives by utilizing methodologies such as geo-tagged photography, sequential photography, social media metadata extraction, GIS mapping, spatial analysis, and visual analysis focusing on the historically rich and culturally significant study area of Sultanahmet, Fatih – Istanbul. By looking at potential structures / locations and then dissecting their special distribution and cultural significance the main study was able to achieve the main objective as well as unveiling a more nuance understanding of the dynamics between Photography, Architecture, and Urban design with respect to perception using Sequential Photography.

**Keywords:** Perception, Architectural Photography, Picturesque, Urban Design, Sultanahmet – Istanbul

## 1. Introduction

For a long time, photography has been a significant medium for capturing the essence of architecture and influencing urban planning and development, the visual representation of urban spaces has been essential in shaping the understanding of the built environment (Amen, 2021; Amen et al., 2023; Jacob, 2023; Moretti, 2023; Amen & Nia, 2020; Aziz Amen, 2022; Gün, 2023; Odunlade & Abegunde, 2023)

. In this modern era of digitalization, the lens through which Architecture and the Urban main tool in the discourse of urban perception. At the same time, social media plays the part of wildly distributing it.

This paper takes a look into the heart of Istanbul known as Sultanahmet, Fatih, a historic centre with a major play in the modern era, seeking to: Investigate the role of perception in urban environments and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque structures/locations. This inquiry comes from a place of not only looking at photography as a tool of documentation in architecture but also as a dynamic tool of shaping perception in the design of urban space. To fully understand the importance of this research one must have to first investigate the historical and theoretical context of architectural photography and the visual perception of the built environment. Beatriz Colomina's look into Le Corbusier's engagement with photography (Colomina, 1987) and James Ackerman's paper on the origins of architectural photography (Ackerman, 2002) both highlight the significant influence of visual representation in the architectural field. Furthermore, on the urban scale level, Eve Blau's investigation into industrial cities further reiterates the significance of Photography in shaping the perception of urban landscapes (Blau, 1989), While Gordon Cullen highlights the importance of perception sequentially moving through an urban environment and how it impacts Human Experience of the urban fabric with principles of urban design, such as scale, rhythm, and focal points (Cullen, 1961).

In this modern era, the influence of photography spans beyond traditional platforms, with social media and online reviews becoming significant instruments in shaping urban development. The intersection of technology and social media in urban space is seen in studies by Giaoutzi, M., & Mavragani, E. (2018), Adams, P., & Hoelscher, S. (2016), and Gretzel, U., & Yoo, K. H. (2008), shedding light on the growing importance of online content 2 in Urban Development and Design decision making. The use of Geo-tagged Photography and Geospatial mapping emerges as a crucial methodology approach, the benefits of Geo-tagged photography in revealing the dynamics of urban environments are highlighted in studies by Paldino et al. (2015). Furthermore, the special analysis of geo-tagged photography can provide a nuance understanding of the special preference of urban areas and this information can be used in further urban development as illustrated by Kádár, B., & Gede, M. (2013). In pursuit of the objective of this research a systematic review of existing literature will guide this exploration, a look into Sultanahmet's picturesque urban structures was taken and to see how they impact sustainable urban planning and improve urban development. The historical context was considered, modern technology, and the role of social media in shaping the

city's landscapes. By the end, it provides a comprehensive understanding of Istanbul's urban structures and how they can be improved for a sustainable future.

### **Objectives**

The main research question guiding the main study this paper was extracted from is: "What are the key picturesque locations/structures in Sultanahmet, Fatih – Istanbul, and how can their spatial distribution, and cultural significance be characterized and mapped for urban design and development?"

But this paper will focus on the secondary objective of the main thesis which is to "Investigate the role of perception in urban environments and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque landmark/structures."

## **2 Literature Review**

### **2.1 Introduction**

To approach this study first one have to contextualize the historic and theoretical factors at play from the initial ideas of integration of photography into architecture as well as urban design and then further along the line with the rise of social media and how it played a part as a catalyst for the push of photography in the general betterment of Architecture, Urban Development and Cultural Heritage, after a look at some of the previous literature that discuss the historic context of photography in architecture and urban design and how the use of Geo-tagged photography in social media enhanced the widespread of this phenomenon, from then which the stance of this study will be taken.

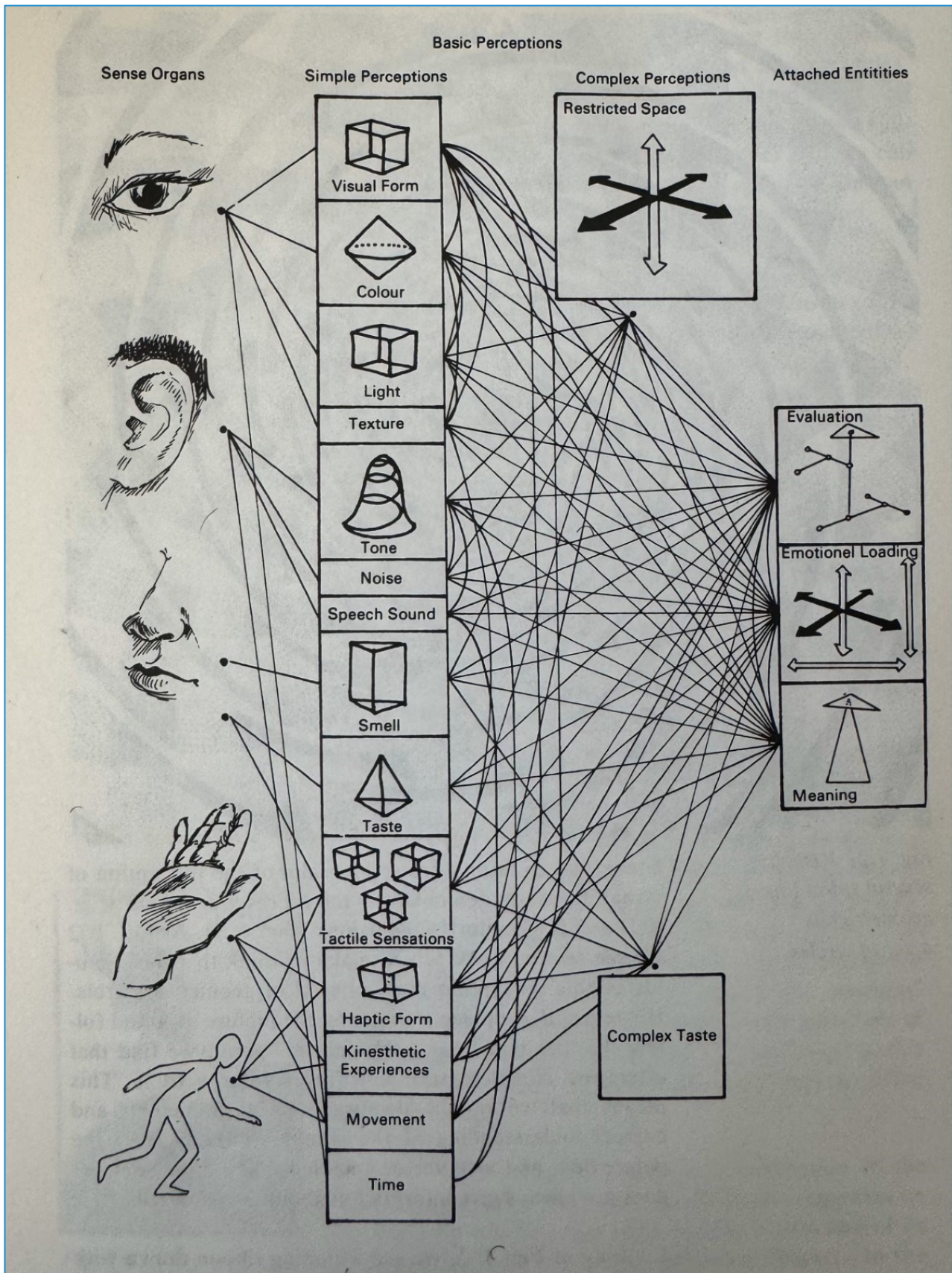
### **2.2 Historical and Theoretical Foundation**

#### **Architecture's Early Contact with Photography (Architectural Photography)**

Photography played a major part of how Architects perceived and articulated their designs from the get-go, and this was recognized by one of the Pioneers Le Corbusier, he saw photography as a tool to capture the essence of architectural structures and represent architectural concepts (Colomina, 1987). One of the earliest architectural photographers, James S. Ackerman laid a theoretical foundation in the origin of architectural photography, he helped establish photography as a tool for architectural expression. The major role he played in the historic evolution of architectural photography brings attention to the enduring influence, which is vital for the understanding of the contemporary urban landscape (Ackerman, 2002). Some other noteworthy architecture photographers that published are Julius Shulman who highlighted the importance of paying attention to lightening, composition and context when it comes to enhancing the visual impact of architectural photography and unveiling the true essence of the built environment in his book *modernism rediscovered* (Shulman, 2000) and also Iwan Baan who incorporated human activity and 6 context in Architectural photography revealed a more in-depth view of the relationship between people and the build environment (Baan, 2012).

#### **Perception and Architectural Photography in Urban Environments**

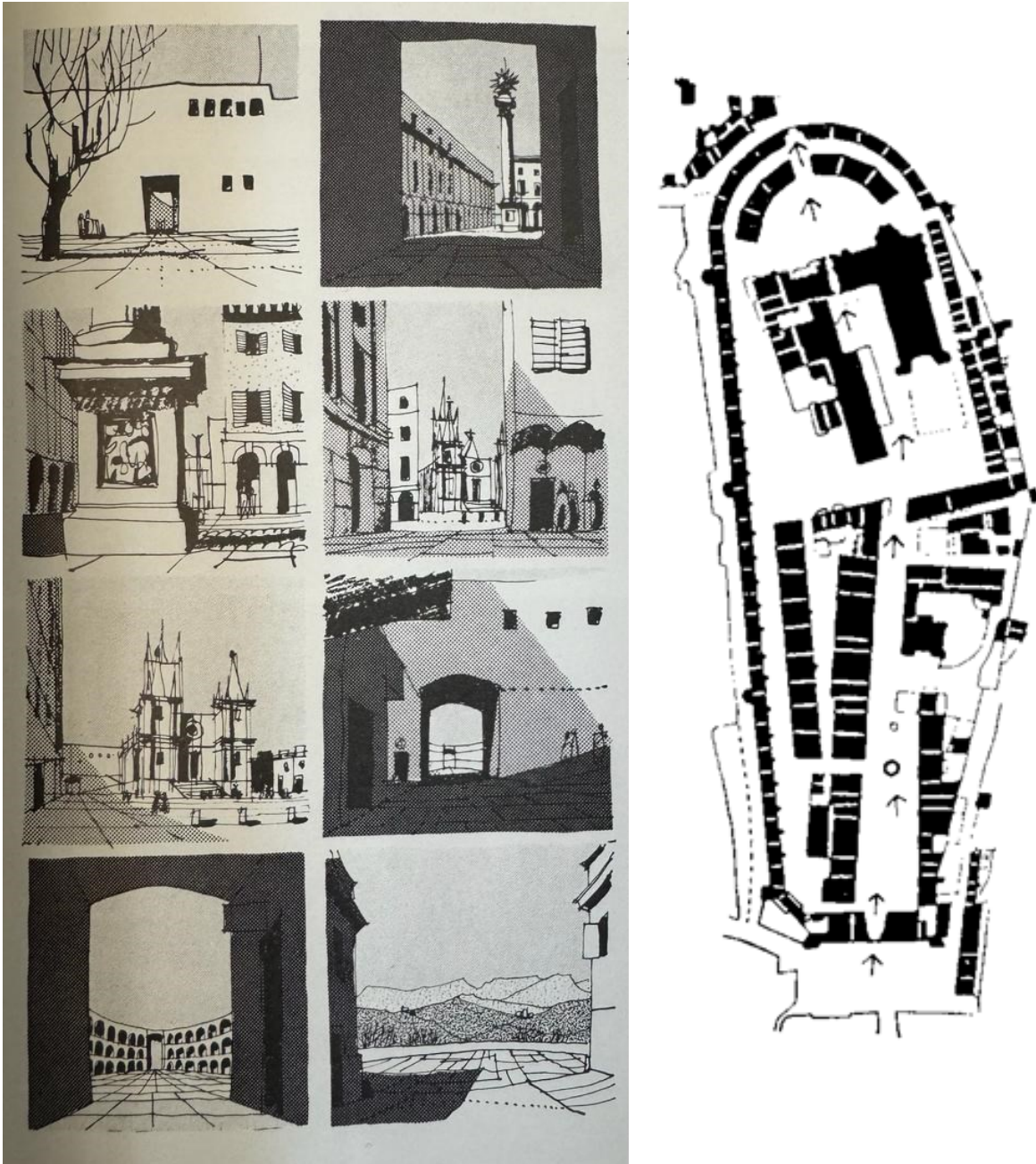
To further understand the importance of Photography in Architecture and Urban Design you need to understand the importance of perception which is the main medium of how people digest the environment. This was articulately illustrated in Hesselgren (1975) where he explained basics of perception and he explores how individuals perceive and interact with the built environment, understanding the theoretical and psychological importance of perception to an inhabitant of the urban environment informs the photographer better on how to utilize perspectives to optimize his photography in the urban tapestry (Hesselgren, 1975).



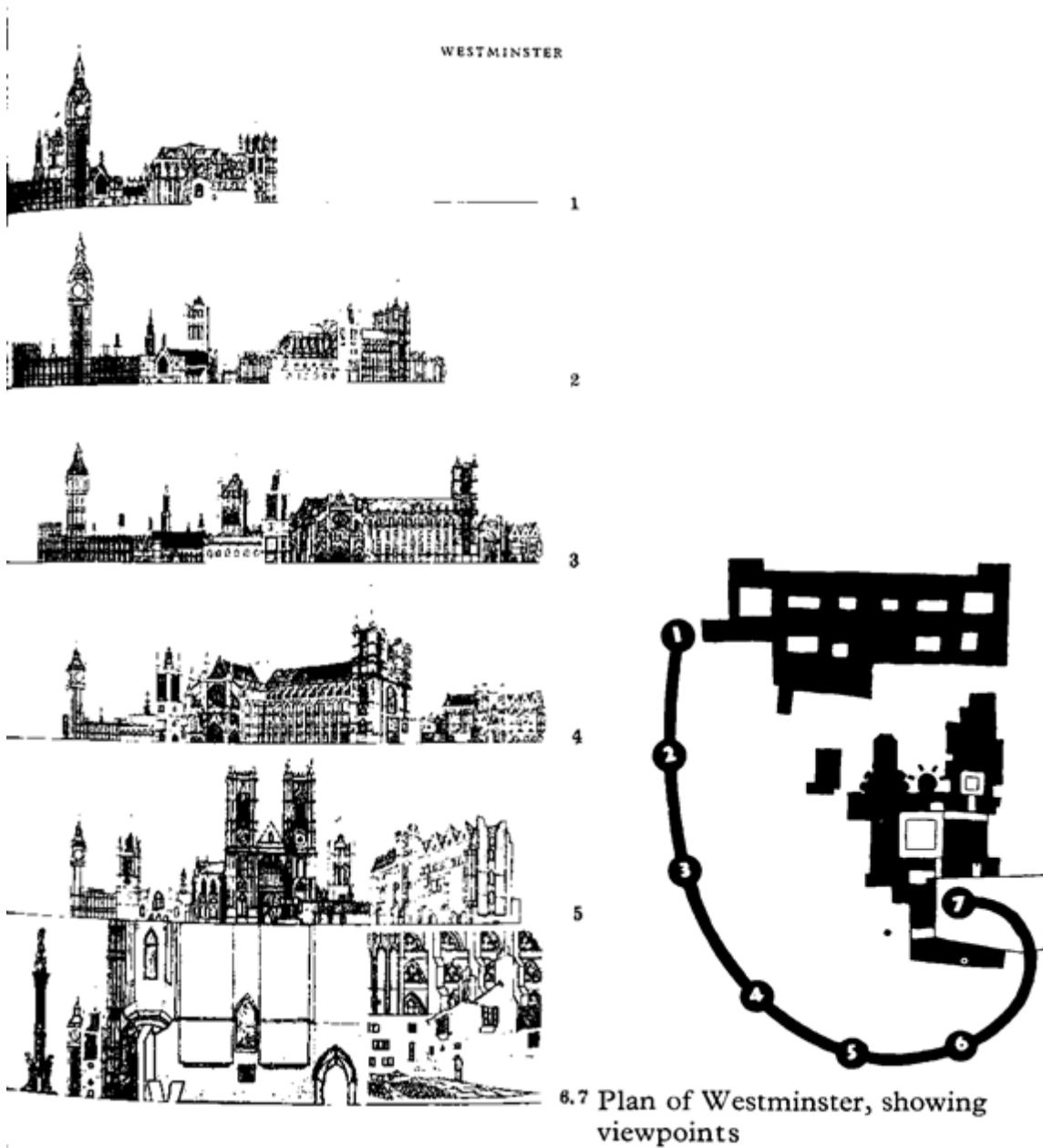
**Figure 1:** The Perceptual Process, Source: Hesselgren, S. (1975). Man's perception of man-made environment: An Architectural Theory.

Perception, in Cullen's (1961) opinion, is essential to developing a harmonious townscape. Urban designers can design spaces that are both aesthetically pleasing and highly functional by having a thorough understanding of people's perceptions and interactions with their surroundings. Cullen's methodology emphasises how important it is to take

human perception into account as a basic component of urban planning in order to make sure that the constructed environment appeals to users' emotions. He emphasized the importance of visual qualities in urban environments in his book townscape, he explains his idea of serial vision by taking us through a narrative of perceiving a small town sequentially as you go through its buildings and various twists and turns of streets, he appreciated the subtle beauty of the elements that made up the town and he quotes "All too often we have condemned the old, rootless and romantic as 'picturesque' but no amount of heavy moralizing can alter the fact that people do take pleasure in the arrangement of buildings and in the various twists and turns of streets" (Cullen, 1961).

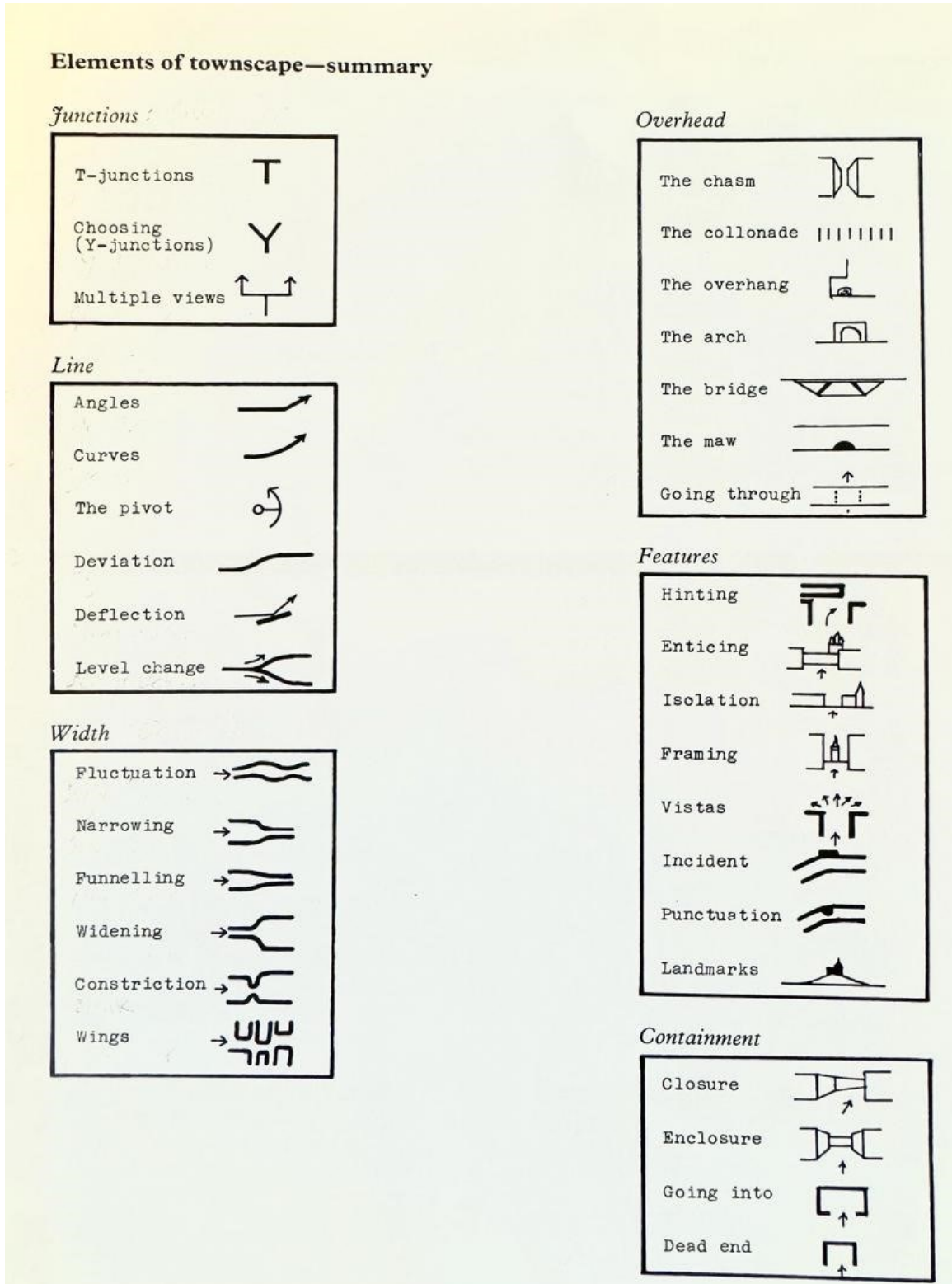


**Figure 2:** Serial Vision, Source: Cullen, G. (1961). *The Concise Townscape*. United Kingdom: Architectural Press.



**Figure 3:** Serial Vision Westminster, Source: Cullen, G. (1961). *The Concise Townscape*. United Kingdom: Architectural Press.

In "Road Form and Townscape," McCluskey (1992) expands on Cullen's concepts by concentrating on the connection between the arrangement of roads and urban perception. He argues that how roads and sidewalks are laid up has an important effect on how people perceive and navigate within urban areas. McCluskey highlights the significance of road geometry in determining the aesthetic value and functionality of a townscape. The perception of different elements in the urban environment influences the interaction with it as well as the emotions towards it, urban elements such as roads are not an exception to this, road design influences visual quality and character of an urban environment McCluskey (1992) believed road design and how it intersects with the urban environment influences the perceivers perception as well as the visual quality of the urban environment, In Part I - chapter 4 of his book he illustrated Elements of Townscape based of the concept developed by Gordon Cullen (McCluskey, 1992).



**Figure 4:** Elements of Townscape, Source: McCluskey, J. (1992). Road form and townscape. Architectural Press.

Cullen and McCluskey both emphasise how perception is an active interaction with the built environment rather than just a passive process. Their creations highlight the necessity for urban designers to take into account how individuals and neighbourhoods would interpret various design components. Through the integration of perception studies, findings into their urban design methodologies, planners and architects can create more human-centred and adaptable environments that improve the standard quality of life for residents and visitors.

One can also see similarity in axis of discussion when it comes to important elements that elevates the beauty and sophistication of Photography and Urban Design such as in the College City by Rowe, C. & Koetter, F. (1978) where they discussed Rowe's theory on the city as a collection of diverse architectural and urban elements that come together like a "collage" to make up the city which highlights the importance of juxtaposition and contrast in elements (Rowe & Koetter 1978). Similarly, by understanding more theories in Urban Design one can utilize this information in

approaching photography in a way that benefits Urban Development, a look into Christopher Alexander's book *A Pattern Language* shows that by utilizing design patterns, one can help photographers identify and capture the essence of urban landscapes systematically (Alexander, 1977).

As the Industrial Revolution came along and urbanism was on the rise, photography played a vital role of documenting and understanding the rapid Urban changes at the time. This was well illustrated by Blau, E. (1989), in his examination into the early industrial city where he highlights photography's pivotal role in portraying industrial cities and the societies perception of urban development and transformation this laid a steady foundation for understanding contemporary urban changes, he also stated how "Photography represented the most immediate and visually powerful form of documentation, providing not only concrete facts about the city but also powerful visual images" (Blau, 1989). These works highlight the importance of considering the historical and theoretical context when studying the relationship between photography, architecture, and urban development.

The complexities and dynamic nature of cities have been explored through urban photography and it has revealed the cultural significance of spaces, objects and events offering a nuance understanding of the urban environment, by examining how urban 26 photography reflects cultural meanings attached to spaces, objects and events (Hunt, 2014) furthermore ariel photography served as a tool for a sustainable urban Development process in the recent urban development in Gijón, Spain (Muñiz & García, 2017) as ariel photograph provided significant advances in understanding the land cover changes and land use over time, and this information derived from the photographs was used for the urban development of the city.



**Figure 5:** Aerial photos showing development over time, Source: Muñiz, Í. O., & García, F. F. (2017). Recent urban development in Gijón (Spain).

Such cases better help us understand that by examining the role of photography on capturing urban spaces one can highlight its impact on social perception, and its role as a tool for understanding urban spaces which can better help us explore similar study (Tucker, 2012). And lastly on setting a foundation of understanding how photography can benefit urban development, the book *Cities and photography* by Tormey, J. (2013) offers a comprehensive dive into the relationship between urban cities and photography in various perspectives.

### 2.3 Rise of Social Media

With the development of Technology and emergence of social media in the public's daily lives architectural photography is not excluded in this, social media propelled the widespread of architectural photography especially in the urban scale, playing a major role in Urban Development and Cultural Heritage in many instances. This is seen being done through Geo-tagged photography alongside online reviews and digital footprint all thanks to social media. Social media used with data visualization is used for sourcing knowledge on urban planning, management, and development which foster a sustainable development process (Ciuccarelli et al., 2014). A new approach at the time of coupling mobile phone and social media data revealed a nuance understanding of urban function and pattern which provided valuable insight of the urban environment which further prove the benefits of social media as a valuable means for study (Tu et al., 2017). Similarly, this idea was reinforced in the next year by Ilieva, & McPhearson, (2018) in their study, they reviewed research that used social media data to access different aspects of urban sustainability and development including energy use, water quality, green spaces, transportation, air quality and population Dynamics.

Specifically social media photos can be utilized to explore the relationship between cultural ecosystem services and the urban landscape features, and by using social media photos as similarly done in several European sites one can have a better understanding of Istanbul's urban landscape (Oteros-Rozas et al., 2018). Social media such as Flickr and Instagram have been used to investigate social media photography however Zappavigna (2016) argued Instagram constructs subjectivity which in the long run will shape perception of an urban environment, one could disagree with this while looking at the other hand on how social media is a representation of the society just like how Gerodimos

(2018) explored reflective photography as a tool of urban voice for youth and or public which basically serves as a platform for self-expression, meaning by looking at social media you can not only understand the urban landscape but also the social and cultural elements at play in a society expressed by the public on social media.

#### **2.4 Geo-Tagged Photography And Urban Dynamics**

The come up of Geo-tagged photography within social media platforms changed the way people looked at urban imagery, geo-tagged photography provides an interesting insight into the special patterns and intensity of public use in natural treatment systems, and this helps in the analysis and understanding of urban environments (Ghermandi, 2016). A similar method can be used of taking a look at geotagged locations on social media within Istanbul to get an insight into the intricacies and dynamics of the urban area and this will exponentially help this research. Hotspots in an urban area can be detected using geo-tagged photography on social media which can highly contribute to the spatial analysis in a study and hence contribute to the urban development and cultural heritage (Hirota et al., 2014). A quick location-based search on the internet or any social media platform will more often than not provide visual feedback on the searched area therefore such benefits brought by the age of social media should be taken advantage of, especially in the case of such studies as this one, As stated by Hu, Y et al. (2015) "Geotagged photos on social media platforms provide an opportunity to understand human behaviours and preferences in urban environments". Therefore, these will serve as a guide for this study and data collection of the urban landscape of Istanbul.

#### **2.5 Conclusion**

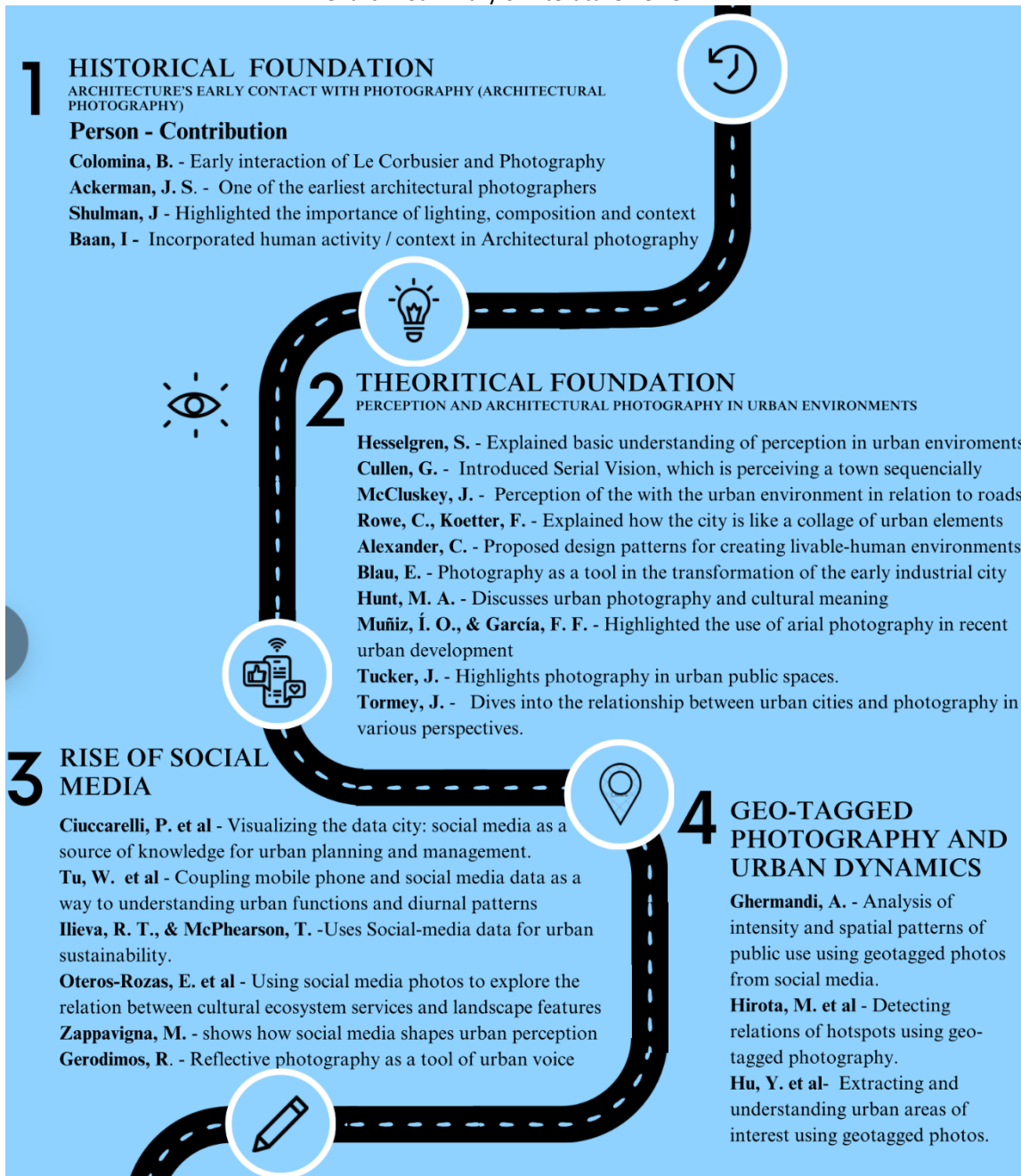
The historic integration of Photography into architecture laid a foundation to its major contributions into urban development, with the rise of social media propelling photography to a new level affecting the Public's perception and dynamics with the urban environment with tools such as geo-tagged photography which have proven to be valuable in understanding the nuance of urban dynamics and offering a new look into special distribution and cultural significance in urban development, alongside other methodologies that have proven successful for such use, such as literature review, geospatial mapping of geo-tagged photography, user generated content, digital footprint and photograph analysis.

With all this in mind a stance that properly defines the approach of this study on the matter can be taken. Upon reviewing all previously stated it becomes apparent that there are significant parallels between Architecture and Photography in multiple axis, perception being the main one of them and by optimising one of them one can translate it into the other, furthermore the perception of an inhabitant of an urban environment to his surroundings is the main medium to which he interacts with it both physically and psychologically hence elevating the importance to which utilizing perspectives in photography can influence the experience of the urban environment. So, by taking a look at the urban environment through the lens of photography one can extract beneficial insights to Urban Design and Development. Therefore, one can investigate and prove this further by pursuing the objectives for this paper which are to:

"Investigate the role of perception in urban environments and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque landmark/structures."



Chart 1: Summary of Literature Review.



**3. Methodology**

The main study consisted of both quantitative and qualitative methods of research of which included social media extraction, Geo-tagged photography, Metadata extraction, Quantitative analysis, Sequential Photography, GIS Mapping, and Manual Evaluation of Photos then looking further into the data gathered with Correlation Analysis, however this paper will only be highlighting the qualitative methods used the archive the objective of highlighting role of perception in urban environments and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque landmark/structures.

**Data Collection:**

- Sequential Photography: inspired by serial vision, taking pictures in increments while going through a path of the urban fabric.

**Data Analysis:**

- GIS Mapping: Employing Geographic Information Systems to map out the locations of the study area.

**Visual Analysis:**

- Manual Evaluation: Visual inspection and analysis of the collected pictures.

**Integration of Data:**

- Correlation Analysis: Exploring correlations between all data

### 3.1 Case Study Area

Study Area: **Sultanahmet**, Fatih – Istanbul



**Figure 6:** Map of Sultanahmet District, Drawn by Author

Sultanahmet, located in the historic district of Fatih in Istanbul, it is a lively and cultural hub that displays the core of Turkish historical and Architectural heritage. It is known as the old city or the historic peninsula, Sultanahmet tons as a testament to Istanbul's historic influences, blending the impacts of multiple civilization does have occupied the region

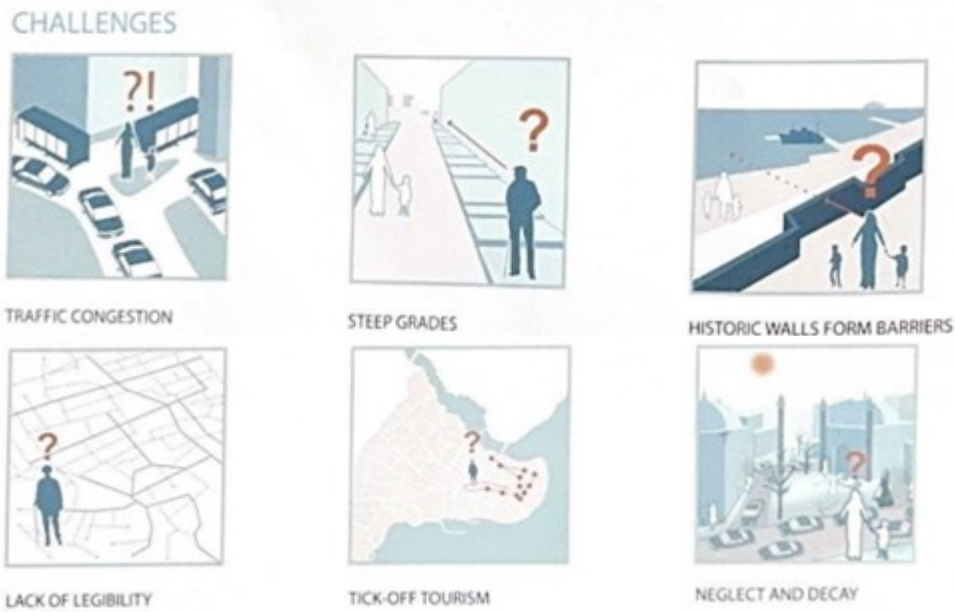
This significant neighbourhood hosts some of the world most renowned historic landmarks opening a portal into the diverse history of Istanbul. One of these architectural masterpieces is known as the Hagia Sophia and right adjacent to it is the Blue Mosque (Sultan Ahmed Mosque). The area also hosts the historic Topkapi Palace which was once the residence of Ottoman sultans and now a museum exhibiting imperial collections.

As you navigate through Sultanahmet's maze-like streets, you will encounter bustling bazaars, lively cafes, and a vibrant atmosphere that seamlessly blends the old with the new. As a hub for tourism and cultural exploration, Sultanahmet stands as a living testament to Istanbul's rich tapestry of history, offering an outstanding journey through time.



**Figure 7:** Range of Historic Monument in Sultanahmet, Source: Gehl Architects. (2010). *ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE*. In *Embarq Türkiye*. Embarq Türkiye.





**Figure 8:** City qualities, Source: Gehl Architects. (2010). ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE. In Embarq Türkiye. Embarq Türkiye.

3.2 Data Collection  
GIS Mapping and Spatial Analysis

# SULTANAHMET HISTORIC CONTEXT TIMELINE

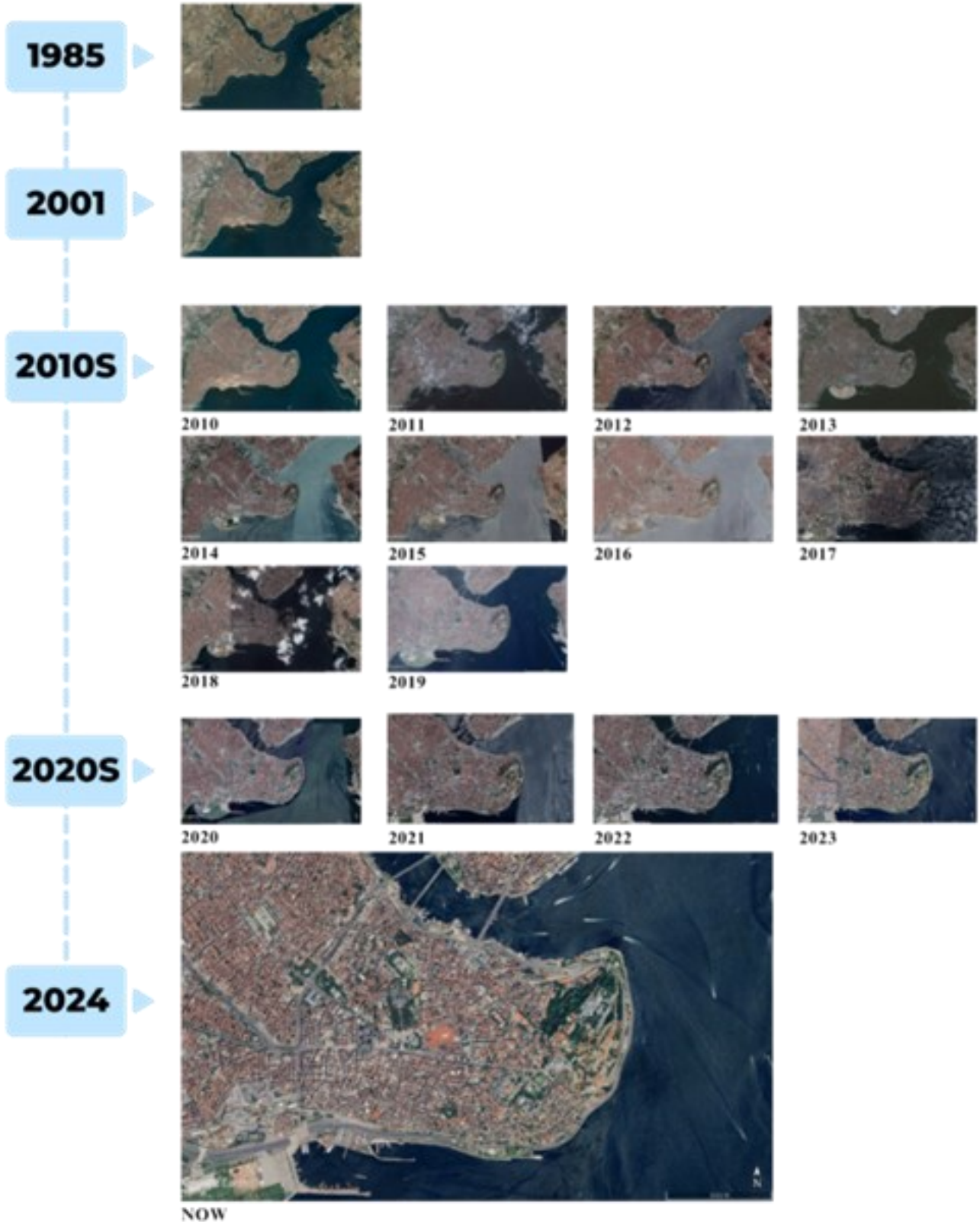


Figure 9: Aerial Maps of Sultanahmet District From 1985-2024, Source: Google Earth (<https://earth.google.com/>) and added annotations by Author.



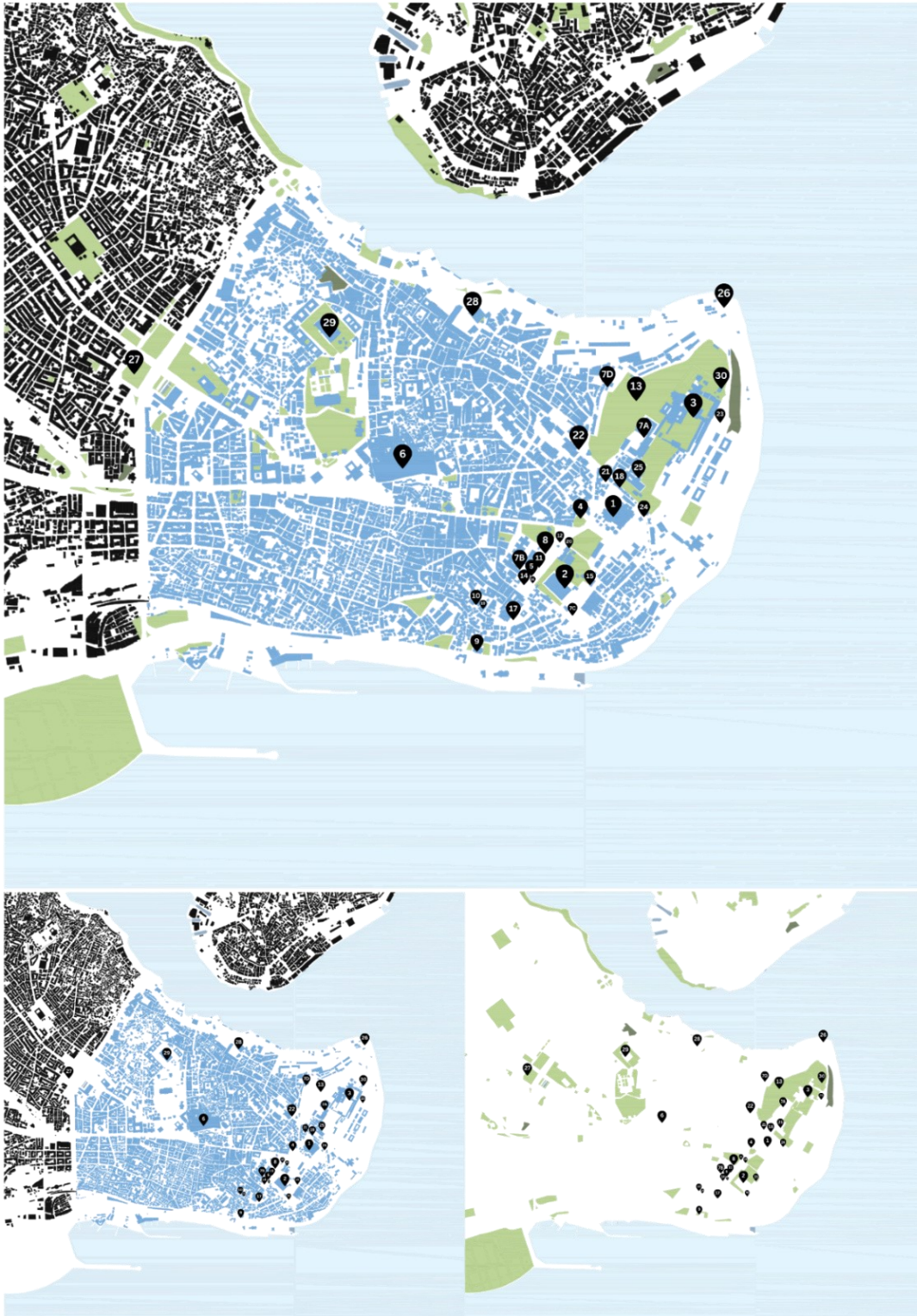
**Figure 10:** Site Zoning of Sultanahmet, Source: Drawn and Adapted by Author, Data extracted from Gehl Architects. (2010). ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE. In Embarq Türkiye. Embarq Türkiye.



**Figure 11:** Topography of Sultanahmet with Picturesque Structures/Locations indicated, Source: Drawn and Adapted by Author, Data extracted from Gehl Architects. (2010). ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE. In Embarq Türkiye. Embarq Türkiye.

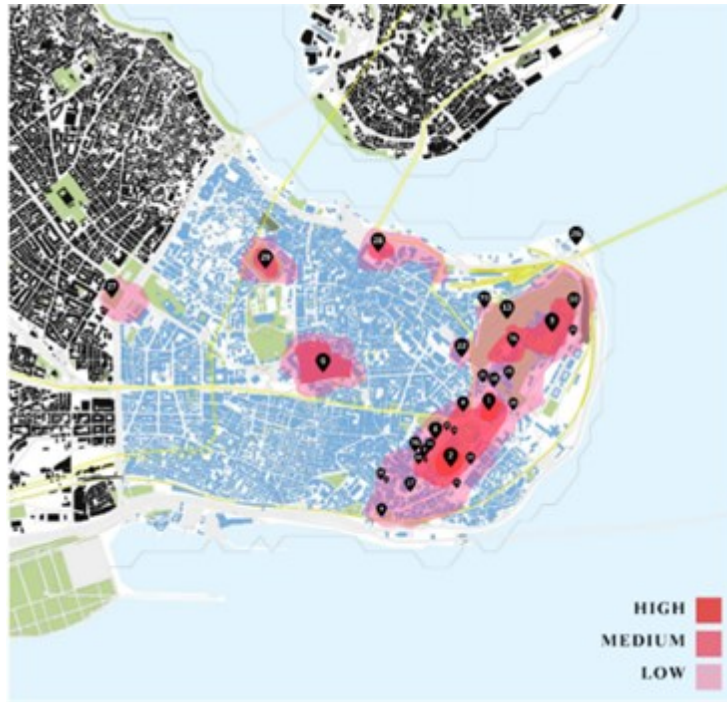


**Figure 12:** Transportation (Roads and Railways) of Sultanahmet with Picturesque Structures/Locations indicated, Source: Drawn by Author, Data from Gehl Architects. (2010). ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE. In Embarq Türkiye. Embarq Türkiye.



**Figure 13:** Voids and Solids with Green Areas, Source: Drawn and Adapted by Author, Data extracted from Gehl Architects. (2010). *ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE*. In *Embarq Türkiye*. Embarq Türkiye.





**Figure 14:** Spatial Patterns (Hotspots), Source: Drawn and Adapted by Author, Data extracted from Gehl Architects. (2010). ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE. In Embarq Türkiye. Embarq Türkiye.



**Figure 15:** Movement patterns of average visitor of Sultanahmet, Source: Drawn by Author, Data from Gehl Architects. (2010). ISTANBUL Accessible City: ISTANBUL PUBLIC SPACES AND PUBLIC LIFE. In Embarq Türkiye. Embarq Türkiye.

Sequential Photography of Sultanahmet



Figure 16: Sequential Photography Path taken, Source: Drawn by Author

START



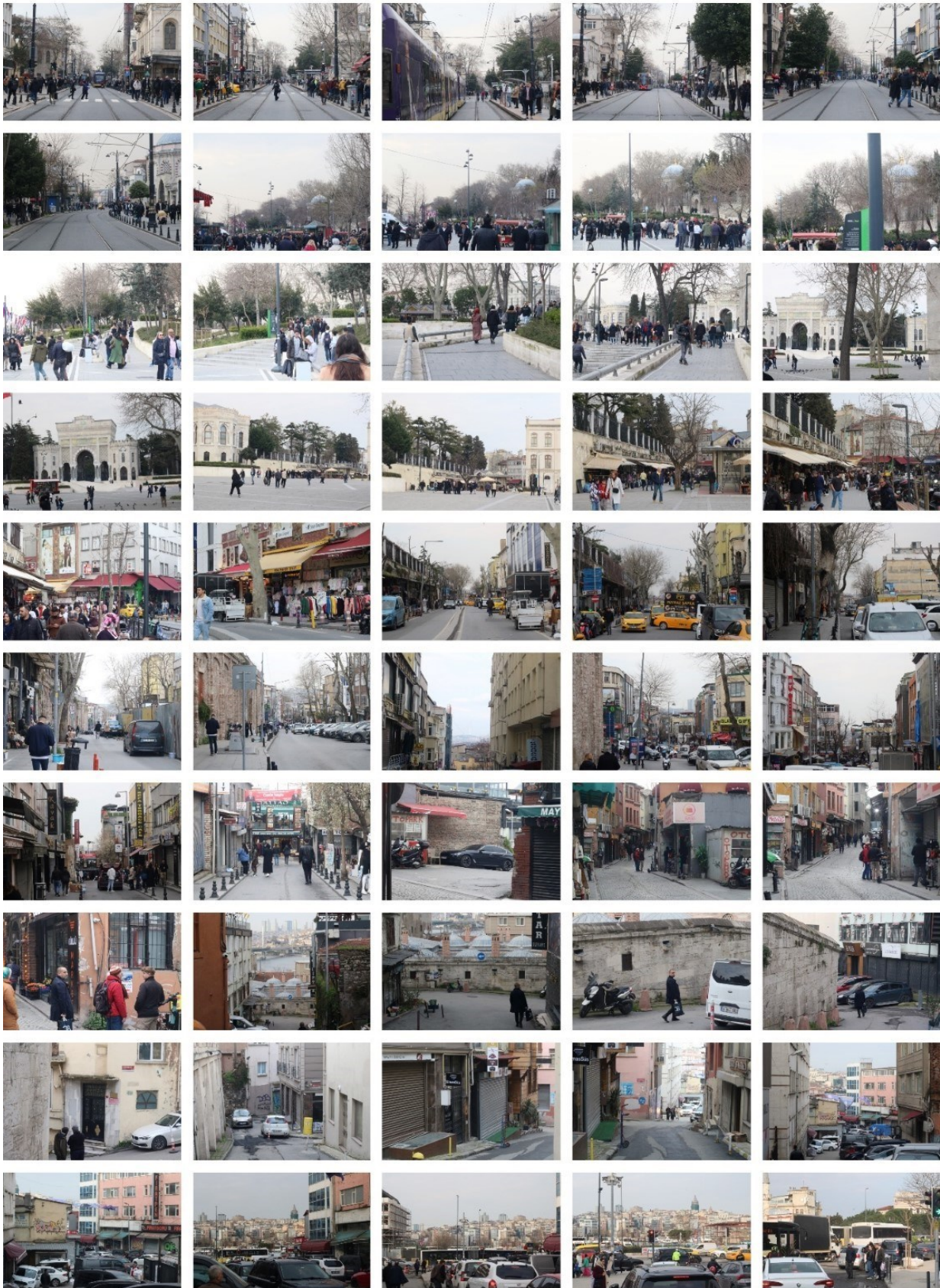




Figure 17: Sequential Photos of Sultanahmet's average visitor's path Captured by Author

#### 4. Data Analysis and Discussion of Results

##### 4.1 Investigation of Perception in Urban Environments by Sequential Photography

The findings in this research further support the idea of the importance of perception in architecture and photography, from the literature review it is understood that perception is not only the main medium to which inhabitants interact with the environment around them but also serves as a key factor in determining how inhabitants feel and interact with the built environment.

A few factors come into play in the discussion of how individual visitors perceive Sultanahmet, with respects to the individual uniqueness of perspectives, the data gathered suggests there's are similarities between individual visitors or a sense of generalization in the way they perceive Sultanahmet, this is highlighted specifically from the concentration that is seen in hotspot visited as well as the visitor's movement patterns. (See Figure 14 and Figure 15) Furthermore, the data also suggests that the perception of Sultanahmet is not only influenced by the physical architecture, but rather historical and cultural factors accompanied with individual perspectives contribute to shaping the perception of the landmarks within the study area. Virtually all the top picturesque structures/locations in Sultanahmet that was gathered have cultural as well as historic significance, from the influence of the Byzantine era and further along the Ottoman Empire up until the Turkish Republic they have been a sense of grandeur and significant importance placed upon Sultanahmet District, so this Factor contributes to the Public's perception of the area. The rich heritage, architectural splendour, cultural significance, historic narrative, symbolism, and iconography within Sultanahmet has all contributed to the perception. However, there is a bit of nuance to it, with all these previously mentioned factors at play individual interpretation of these facts can slightly hinder the perception of the individual hence highlighting where personal perspectives come into play.

It was established how photography can be utilized for capturing and conveying these perceptions, in this study inspiration from the concept of Serial vision introduced by Cullen, G. (1961) was taken and putting a twist on it using photography to utilize what is known as sequential photography. So, by using the commonly established Pathways of visitors as provided by the data collected, a similar path was taken going through the movements of the average visitor and taking sequential photos in order to show how photography can take one through a similar journey without the need to physically be there. (see figure 15, 16 and 17)

#### 4.2 GIS Mapping and Spatial Analysis

**History:** The study area has been significant in the history of the ottoman Empire and the Turkish Republic and factors such as the geography of the location were essential in making it suitable for the role it played in the play of architecture and urban design.

**Zoning:** By being subdivided to several activity zones Sultanahmet access to several activities makes it more desirable by visitors with its large proportion of tourist sites, leisure locations, and commercial spaces, mixed with a hint of residential and mixed-use areas which is all connected by several Transit amenities it creates a cohesive ecosystem for tourism and exploration in architecture and photography.

**Topography:** Sultanahmet just like the general Istanbul is prone to dramatic contour on the earth's surface, which were well utilized and taking advantage of in this case, the Apex points of hills serve as a strategic location for some of the historical monuments and tourist attractions to utilize the Surreal views to the Bosphorus and Marmara sea and in placement of Topkapi palace giving it fortification as a military advantage for the base of the Ottoman Empire.

**Transportation:** A network of organically connecting walkways, roads, freeways, ports and rail lines connect sultanahmet making its exploration more efficient, the path which the T1 tram line takes from Yeni Camii Mosque through Divanyolu Street the passes by the Grand Bazaar and so on is one of the best mode of transportation to easy discover all of these structures/locations with ease, Further more by excluding major roads from within Sultanahmet and keeping the freeways by the border it promotes workability within the whole case study area which is beneficial given that most of these locations are in walking distance to each other.

**Special patterns and Activities:** With a look at the hotspots and movement patterns of visitors in Sultanahmet, one sees strong support of the data previously collected from all previous methodologies. The top picturesque locations directly correspond to the hotspots and movement patterns of the Sultanahmet district.

**Water:** Sultanahmet's proximity to the sea of Marmara and the Bosphorus creates a set of advantages, connecting it to not just only the Asian side of Istanbul but also to the rest of the world through the sea hence also making its ports a docking point for tourist's cruise ships, also several water points such as drinking fountains and Taps are in several locations within Sultanahmet providing utility to visitors.

#### 4.3 Implications for Urban Design and Development

Urban Design and Development can highly benefit from the findings of this research in various ways as highlighted by this study within Sultanahmet district. This study has highlighted to us multiple architectural structures of great historic and cultural significance, therefore further preservation and enhancement of these structures will not only increase their lifespan but also bring in more revenue for the city of Istanbul, and the cultural heritage can be leveraged for new proposed urban development projects as well. It is also made clear that the public perception contributed to the development of the urban landscape which in all cases for the betterment of the district, it should be taken advantage of effectively.

#### 4.4 Recommendations and Future Research

A recommendation to the policymakers, architects and urban designers is to integrate more visually appealing structures that highlight cultural heritage into urban planning because it is clearly seen how effective it has been in Sultanahmet, Istanbul and places around the world should learn from this.

Further research within and adjacent to this topic can also be looked into in the future for further understanding the dynamics between Photography, Architecture and Urban Design with respect to the role perception plays. Of which are:

- Visual Analysis of Picturesque Urban Landscapes of other major cities with historic and cultural significance on the global scale
- Timeline studies to track changes in visitor patterns and perceptions over time.
- Studies highlighting how different elements of photography such as colour, texture, composition, shape, form, tone, depth, contrast, movement, and lighting and the way they affect architectural photography.
- Comparative Analysis of Architectural Photography Styles
- Cultural Perception Studies
- Technological Impact on Perception
- Socioeconomic Factors in Perception
- Environmental Psychology Perspectives
- Psychological Impact of Architectural Photography
- Cross-Cultural Studies of Architectural Perception
- Ethical Considerations in Architectural Representation
- Digital Preservation of Cultural Heritage and Augmented Reality (AR)
- Memory Studies and Collective Identity

#### 4.5 Limitations

Just like any study hiccups are bound to arise, and the following are limitations to this research. A substantial amount of data extracted for this research relies on online databases and social media metrics are prone to potential bias however this consciously addressed by comparing the data to other sources to support the narrative, other challenges have also arisen during the data collection and analysis process such as completeness and timeliness. And lastly inconveniences in accessing some of these historically significant picturesque structures/locations for a thorough data collection and analysis.

#### 5. Conclusions

The integration of photography into architecture was a pivotal point in the Journey of architectural representation, photography proved itself useful for the betterment of architecture early on, as well as establish itself as a necessary tool in the realm of architecture. From the early point from which photography got involved in architecture it provided utility and creative benefits, from the early interactions of Le Corbusier and photography to the emergence of early architectural photographers such as Ackerman J.S., Shulman J, who highlighted the importance of lighting composition and context and Baan, I. who incorporated human activity into the context of architectural photography.

Photography's involvement in Architecture and Urban Design was bound to be inevitable upon looking at the parallels between the fields, most prominent basic one being the idea of perception, by understanding the basics of perception in architecture and seeing its level of integration in the design process for Urban Design and experience such as the concept of Serial vision coined by Cullen G. and nuanced understanding of perception in the urban environment in relations to roads illustrated McCluskey, J. the parallels becomes apparent, and even more as you look further to the works Blau. E where we see photography directly being used as a tool in the transformation of the early industrial city, and even a variation of this is seen further down the timeline where aerial photography was used in the recent Urban Development in Spain.

Architectural Photography as a whole, was also propelled with the rise of social media as it pushed forward it is wild distribution, and also increased its efficiency with the emergence of Geo-tagged photography which was one of the main methodologies utilized in this study.

The key findings of this study did not only support the narrative of photography to be an effective tool for capturing and conveying architecture but also it provided several key insights to understanding the dynamics of Photography, Architecture and Urban Design in the Sultanahmet District of Istanbul by identifying the key picturesque structures / locations in the study area.

With GIS Mapping and Spatial Analysis portion of this study highlighted more nuance understanding to the picturesque locations / structures by looking at special configuration and context of the study area showing us how factors such as history, topography, transportation and proximity to body of water hopefully the factor in contributing to the picturesque appeal of Sultanahmet's urban landscape, it also highlights Special patterns and activities within the study area which supported data previously collected as it shows hotspots and main movement patterns of visitors going through and concentrated at the exact points where the picturesque structures are located.

It has become apparent in the findings of this research that the perception of Sultanahmet is not only influenced by the physical architecture, but rather the historical and cultural factors accompanied by the individual perspectives on these physical structures. personal interpretations, beliefs or background can all influence personal perception.

It was also revealed that with respects to individual perspectives there is still a sense of generalization in the way Sultanahmet's Physical essence is perceived by visitors as seen in the maps highlighting the hotspots as well as the main work path of an average visitor through the Sultanahmet District.

The main objective of of this paper which is to "Investigate the role of perception in urban environments and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque landmark/structures" was successfully answered, mainly this study revealed the role of perception in urban design by highlighting the importance of it in the way inhabitants take in the urban tapestry and how photography serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque landmark/structures by using sequential photography inspired by serial vision.

This study contributes to the field in various avenues such as in theory, knowledge and practice, the study further supported existing theories established by earlier works of literature in architecture and Urban Design, the study also adds to the vast archives of knowledge within the field of Photography, Architecture and Urban Design as well adjacent fields of Academia. And finally practical implications of the findings of this study can come into play in practice, where new urban designers and developers can utilize the insights of this study and Architectural photography in their concepts and design process, as well as to the policy makers in policy decisions, community initiatives and urban development projects.

The methodologies used in this study proved effective in achieving the main objectives, by utilizing sequential photography inspired by serial vision to illustrate how photography can serves as a tool for capturing and conveying the perception of Sultanahmet's picturesque landmark/structures, delivered the desired outcome with support from, GIS mapping, special analysis and visual analysis. All coming together to create a robust qualitative approach.

The interdisciplinary nature of this study contributes to bridging disciplinary boundaries, the insights gathered from the field of Photography, the field of Architecture and Urban Design provide a diverse yet cohesive understanding of the research topic perfectly.

Further studies along this axis and even neighbouring ideas are highly recommended for an even better understanding of the Dynamics between Photography, Architecture and Urban Design in respects to how perspective ties them all together.

Ethical considerations were meticulously addressed during this study. Upon retrieving the pictures from the historical and cultural sites modest respect was exercised especially within the religious monuments. Also, while this study was being written thorough citation and referencing was exercised to avoid plagiarism of any degree, originality and ideas and approach was important as well as given credit when due.

In conclusion this paper took a closer look into its special distribution and cultural significance of Sultanahmet to see the intricacies of how to utilize this information for cultural heritage, Urban Design and Development all while paying homage to the important rule that perception plays in urban environments. The study also highlights the intertwined intricacies and Dynamics between Photography, Architecture and Urban Design all through perspective, Paving the way for further significant research.

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### **Conflict of Interests**

The Author(s) declare(s) that there is no conflict of interest.

However, This study was explored through the lens of a Masters student of architecture with a passion for photography supervised by a professor in the field of architecture that specialized in Urban Design.

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