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and Physical Sustainability**

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ABSTRACT

Baths, with different characteristics in a wide geographical area, can be seen as an expression of culture namely collective values influencing the formation of the built environment. This study provides a perspective on the cultural and physical sustainability of historical Baths in Istanbul. The purpose is to create a useful platform for complex data to investigate the influence of multiculturalism on the shape of Baths with the meanings of structural, spatial and local characteristics, and to understand the transformation process of the historical Baths and bath culture from the 15th century till today. In this research, relation maps and the chronological tables created with a holistic assessment, and mapping with Geographic Information System has been used as a tool for the correct, clear and comprehensive data. The data has been collected from main sources, current studies and fieldworks about 235 Baths. Furthermore, many interesting sources have provided important information about recent history of baths. In this context, it is considered necessary to define some basic headings; historical, social and architectural description, usage and transformation process. With the expressing of these data in the schematic form by mapping, the perception of the current situation has been practical, perceivable and analyzable. In this way, conservation and restoration decision making has transformed into more healthy and systematic process. Results from the analysis demonstrate the relationship between the transformation of the social-physical environment and the role of the baths in the city. However, the findings highlighted that GIS tools, namely data analysis with mapping has a strong influence on understanding the complex process, and demonstrate the significant and interactive relationship between Baths and their environment.

Keywords: Istanbul, historical baths, bath culture, mapping, sustainability

Introduction

“The origins of the baths are based on the love of water and the culture of the Greek, Roman and Byzantine Baths as a chain of uninterrupted development” (F. K. Yegül, 1995). As an important part of this chain, it is known that baths have a significant place in Roman, Byzantine and Turkish communities’ life in Istanbul (Caraher, Jones Hall, & Moore, 2008; Kafescio_lu, 2009; Kafli). Considering the current conditions, it is important to note that despite the disappearance of this culture in many regions and cities, its presence in Istanbul can be still sustained. In the course of this development, it has been observed that the interactions of the baths with the environment and the society have become quite different with the rapid change of social and physical structure in the last few centuries. In order to analyze these changes of Istanbul baths regarding population and development of the city, data has been collected from its main sources, current studies and fieldworks. Furthermore, many interesting sources provided significant information about recent history of Istanbul baths such as; foundation certificate-charter, council records, travel books, records of workers in baths, population census results, statistical records, bath attendants’ association’s records, water and wood/coal consumption statistics etc.

When all these studies are examined; it has seen that, although there are determinations that can be taken as basis for the development of baths, it is difficult to make clear and consistent conclusions. Identification and registrations are based on different scales and factors, the complexities of meaning caused by the interventions such as repair and reconstruction, many of them are exposed to serious transformations along with the immediate vicinity during the infrastructure and restructuring process, and especially the lack of exhaustive studies can be shown as one of the main reasons for this difficulty. In this direction, to gather the data on a common platform and discuss them within the present situation, the development of the baths in the historical topography of Istanbul was viewed based on chronological development.

Historical Development Process of Istanbul Baths

The history of the city, beginning with the foundation of Byzantium, traces the prehistoric settlement areas dating back to the third millennium BC. In the development process of the city, the construction of baths and places of social life can be seen clearly¹ (Özey, 1996). During the Byzantium period, a waterway was built by Hadrian (117-138) for the city's baths, and the construction of symbolic structures expressing the preciousness given to the city like the hippodrome and Zeuxippos baths’ constructions were started (Kuban, 1970; Müller-Wiener, Schiele, & Schiele, 1977). Especially, baths took place during the splendid restructuring process which started with the declaration of the city as the new

¹In the historical development of Istanbul, the geographical boundaries were enlarged and the city which was first established on the back of Sarayburnu became an administrative center in the time of Constantinus and was divided into 14 neighborhoods such as Rome (Özey, 1996).

administrative center (AD 328). With the hippodrome, Zeuksippos baths, and agora, city of Septimus Severus had been influential in determining this new capital city plan (Mango, 2006). In addition to the completed Zeuksippos baths, Constantinus initiated the construction of the Constantinianai Baths in the south-east of the Havariyyun Church in 345. Constantinus and his successors built many thermae with Roman style in the city (K.Durak, 2010). Therefore, after the waterways of Hadrianus, the addition of new waterways, a large number of cisterns and advanced systems' constructions continued during the later periods of the city² (Altınay, 1936; Kuban, 1970). The Valentinian aqueduct (368-373) can be seen as one of those monumental examples that still extant. Beyond the administrative function of the city, its importance as an attractive commercial center in terms of location and rapid population growth were effective in the formation of a rich program including baths (Müller-Wiener et al., 1977). On the other hand, negative effects can be seen in urban development with plague, earthquakes and fires, major internal rebellions such as Nika, or the destruction caused by Crusader invasion. In present, very few remains of the 153 balnes and 8 therme belonging to the late 5th century in Notitia Urbis is a fact that many factors have influential and therefore different assumptions have put forward about it³ (Caraher et al., 2008; Kalkan, 2001; Kuruçay, 2012; Taşcıoğlu & Pasiner, 1998; Yegül, 2008). Osman N. Ergin states that about 20 baths inherited from the Byzantine period in Istanbul and these were transformed more suitable for being bathing by the Turks customs and a few were re-built. Yegül lists the 26 Byzantine baths in the city roughly by their location and names (Caraher et al., 2008; O. N. Ergin, 1948; Seviç, 2014; F. Yegül, 2011). As the city's information on the Roman and Byzantine baths, Yegül's findings are also often based on legends, stories and written sources about baths known from the memorials and a small number of archaeological sources. Achilles baths, which are known to be the oldest baths in the city, built by Byzas, Kaminia baths of the Severus period, which 2,000 people used all together, or the small neighborhood baths between the Kalenderhane church/mosque and Valens aqueduct can be given as an example of these (F. Yegül, 2011).

In the middle of the 15th century, under the domination of the Turks, city was entered into the process of important developments experienced through political, cultural and social dimensions. In the process of restructuring the war-ravaged city, the complexes built by the foundations of courtier or statesmen, which constitute the basis of the architecture of that early period, and baths within that foundation system had taken an significant role in revolving capital⁴ (Bilgili, 2006;

²The system extending to Belgrad forests includes aqueducts, open and closed cisterns, water scales and ducts. In addition to monumental structures such as the Valens aqueduct, Çukurbostan, Yerebatan palace, Binbirdirek cisterns are the most important (Altınay, 1936).

³Similarly, a large number of Byzantine spas and baths in Bursa do not have a sample, indicating that the baths were used by the Turks (Kuban & Emden, 2007).

⁴As in Fatih, Süleymaniye, Bayezit complex, smaller or individual buildings such as Küçük Ayasofya has also baths (Yaşar, 2014). Mantran mentioned about baths are almost as common as mosques, madrasas, imarets, and their close association with the foundation system (Mantran, 1990). For example, Rustem Pasha, known for its foundation buildings built in the 16th century, has 32 baths in various cities outside Istanbul (Eyice, 1997) (Yılmazkaya, 2002).

Cansever, 2005; Kuruçay, 2012; Müller-Wiener et al., 1977). It is therefore seen that in the settlement areas, many baths were usually constructed as part of these complex⁵. In 1473, written by Fatih Foundation, Sultan had 10 baths within the wall and 3 baths in Galata⁶ (Kuban & Emden, 2007). Ayverdi indicated 32 bath related to the 15th century Fatih period (1453-1481), and A.Saim Ülgen expressed the baths with different signs in his map about that period⁷ (Ayverdi, 1953) (Ülgen, 1939; Yaşar, 2014). The fact that baths are the most remaining structures from the buildings built in Istanbul during the Fatih era shows that these institutions have a strong connection with social life and their continuous use. Starting from the 16th century (1553), with various data such as trade, municipality and public works and settlement, and daily life, Ahmet Refik's study based on Ottoman archives provide significant informations about baths. Specific topics such as the construction of Edirnekapı, Kılıç Ali Paşa, Hoca Sadeddin Baths, water supply to Dikili Bath and the construction of baths for the needs of the patients in Darüşşifa mentioned in that studies (Refik, 1935). In the 16th century, the social life of baths and their place within the city continued and the construction of the complexes and baths attached importance during the Kanuni period (Yaşar, 2014). It can be said that although the construction of the baths was implemented in the whole of the country and in the conquered regions, Istanbul reached different dimensions with architect Sinan (Inan, 1956; Kuruçay, 2012). After being chief architect, Sinan applied the most important complexes, aqueduct and baths in Istanbul⁸ (Güldal, 2012). M.And, examining the daily life in Istanbul in the 16th century, mentioned the significance of the baths in social life as a chapter in his book and especially cited from Bossana da Zara, Schweigger, Postel with important knowledge and experience about baths (And, 2015; Schweigger, 2004). Considering the statistics for the 16th century, 36 new baths were built in the city during the Kanuni period (1520-1566) (Yüksel, 2004). There were only 32 names for Istanbul, which belong to Sinan (1489-1588) (Müller-Wiener et al., 1977). In a

⁵Baths are functionally related structures with mosques and guesthouses in complex (Kuban & Emden, 2007). There are also small public baths for the needs of the neighborhood, as well as spacious baths in monumental dimensions. There are examples of a mansion bath like Şengül bath, barrack baths like Acemoğlu or other baths such as tekke, palace, hospital, which are associated with a certain building or complex but later transformed into public bath (Ayverdi, 1953).

⁶About the baths built by Sinan; “37 in Tezkiretül-Bünyan, 52 in Tezkiretül-Ebniye. 40 in Tuhfetü'l-Mimarın, and 45 in Anonymous Risale. The number of baths common to all of these documents is only 6. The number of all the baths the documents reported is 59” (Önge, 1988)., Under the subject of destruction in the study of Ünver, demolished baths has been reported such as Sarıgözel from 32 baths of Sinan, Mufti Bath in Macuncu, İbrahim Paşa in Silivriapi and Koca Mustafa Paşa Baths in Yenibahçe (Ünver, 1942). Eyice indicates that there was 25-30 baths in the list of works built by Sinan in the Istanbul (Eyice, 1997).

⁷E. Çelebi states that in 1451-81 the Turks built 27 bathhouses in the city. In the chronological list of Müller-Wiener there are 31 (+1) baths dating from the 15th century (Taşcıoğlu & Pasiner, 1998).(Müller-Wiener et al., 1977).

⁸The Mağlova Aqueduct is one of the important masterpieces that Sinan built to supply water to Istanbul (1554-63). Kırkçeşme waterway took an active part in eliminating the water shortage of the city and continuing the construction of the baths in the 16th century (Müller-Wiener et al., 1977).

book about experiences of a stranger prisoner lived in Istanbul, who mentioned baths with their rituals and their abundance together with mosques, and rum churches in the city about several thousand (Carım, 1964). Therefore, with the development of the city, it can be said that the social activities and numbers of the baths in city at 16th century reached an important point.

In the 17th century, along with the coastal expansion of the city, the construction of monumental structures stagnated but city still had hundreds of baths (Kafılı, 1950; Kuban, 1970; Mantran, 1990). Evliya Çelebi stated that there were 151 baths and 17 more were built during his trip in 17th century⁹ (Demircanlı, 1989; Kahraman, Dağlı, & Dankof, 2007). Mantran emphasizes that 61 of these baths were within the city walls and 51 were outside. When special mansion and palace baths was added to this list, it can be seen that baths number had reached to a number as stated by E. Çelebi¹⁰ (Şehsuvaroğlu). Studies of Historian S.S. Hovhannesyan (1740-1805) on Istanbul, many baths were handled in the historical topography of the city (Hovhannesyan, 1996). In the book of E.Çelebi Kômürçiyân (1637-1695), there are baths which related to the bathing culture, water system and many districts or complexes (Kômürçiyân, 1988). In general terms, it can be said that the baths of the 17th century protected relations with city and life.

According to the records of the baths dating from the 18th century, it was found that there were 109 baths within the city walls, 69 baths outside and overall number was 178 baths operating. However, according to the book registrations in different dates, information of 195 baths was given in 1752 and 195 (112 in city wall, 83 out) in 1866 (Eyice, 1997; Kuruçay, 2012; Müller-Wiener et al., 1977; Yaşar, 2014). These books belonging to 1731-35 and 1752 were created with related to baths and employees, while the book of 1766 related to owners and their rents. When examined the archives of the Babıali, it can be seen that intensity of baths outside and inside of the walls in 1752 and 1766 (O. N. Ergin, 1948). J. Dallaway, after three-year experience in 1790s, stated that there were 130 public baths in Istanbul at the end of the 18th century¹¹ (Dallaway, 1797). Section of İnciciyan's (1758-1833) book, "The Palaces and Famous Buildings", which depicted of 18th century buildings including baths, stated that there were 130 domed baths in the city¹² (İnciciyan, 1976). In the 18th century when arised economic depressions, it was not seen that the baths as part of complex which attracted attention with Sinan period. In addition, the Divan records includes important specification; "Bath construction in order to prevent excessive water and

⁹Despite the exaggerated findings of Evliya Çelebin, it is seen that the bazaar baths depicted with different characteristics correspond to very close numbers.

¹⁰Considering the Pervititch maps, it can be seen that many mansions have a significant number of baths in city.

¹¹Dallaway's study is a history and geographic sources rather than travel book. The findings based on the counts of Istanbul Kadi indicate that there are 88.185 houses and 130 public baths in the city. In the Encyclopedia of Istanbul, it is said that these numbers should belong only to the within the city wall (Koçu, 1958).

¹²It is stated that the number of mosques, baths and other public buildings was given according to the list of istanbul Kadi in 1765.

wood consumption in Istanbul" (Refik, 1988). Therefore, it is seen that the baths were built at smaller scales and fewer in this period.

In the census of the 1883, there were 169 baths in the city (O. N. Ergin, 1948). Among the findings of Ali Cevad regarding Istanbul in 1887¹³, there were 175 baths in the property records (Özey, 1996). In Osmanbey's book "Mecmua-i Cevami", there is a list of 75 baths with names and places within the citywall in 1886-87 (Eyice, 1997; Köseoğlu, 1952; Yılmazkaya, 2002). In addition to general evaluations of Istanbul baths, special findings regarding the whereabouts were also frequently seen. In the study of Ali Cevad's about 1897 Istanbul, Hasköy and Sötlüce was described as a place where beautiful baths and fountain remains could be seen (Özservet, 2014). (1842-1928) Ali Rıza Bey, minister of wholesale fish market, also mentions the rituals of the baths (Bay, 1970). In the 19th century bathing culture of Istanbul, beyond the local resources attracted foreign travellers and officials' interest, such as Edmondo d'Amici, marshal vol Moltke (1835), and Miss Pardoe (De Amicis, 2013; Dirimtekin, 1953).

Considering the records of the 20th century, while C. Gurlitt (1907-12) mentioned a few baths in his book, Austrian H. Glück (1921) examined 23 baths in a comprehensive manner in terms of architecture and art history (Glück, 1921). There were 178 baths in Istanbul as of 1916 within the municipal boundaries, according to the statistical records regarding whereabouts. They were scattered as Fatih 43, Bayezid 37, Beyoğlu 29, Yeniköy 3, Anadolu Hisarı 14, Üsküdar 17, Gâzîköy 25, Ada 4 and Makriköy 6¹⁴ (Öztel, 2013). In another statistical record of 1935, this number decreased to 150 with the latest fires and destruction. In the records of the Bath attendants' association in 1948, Istanbul had 72 baths heated with coal and 8 baths heated with wood, overall, 80 baths. Osman N. Ergin was predicated this decrease in the number of baths on being used in different functions such as profitable warehouse, cold storage, even cinema with the loss of their original functions (O. N. Ergin, 1948).

When examined the academic studies started in the 20th century, in addition to the rich archives of R. Ekrem Koçu, Neşet Köseoğlu (1952) identified 91 baths 36 of them active including baths inside of city walls (Köseoğlu, 1952). The list of 193 baths created Şinasi Akbatu (1973) is quite comprehensive. Especially, the study of Haskan (1995), which is a historical bibliography of the İstanbul baths including Boğaziçi, Akbaba, Bulgurlu, İcadiye, Maltepe and Yakacık districts and surrounding areas, contains 237 baths 60 of them active in detail (Haskan, 1995). To these studies,

Unver (1939), approached with great sensitivity, stated the current situation as a constant demolishing and only 20-25 baths are active¹⁵, or similarly in the 1950s, Eyice pointed out 32 baths have been demolished, chronological analysis of Müller (1977) on the map/list, the studies of Nina Ergin (2015) and Ahmet Yaşar (2014) used bath record based different dates, Yılmazkaya's book (2002) as a

¹³Ali Cevad notes that the findings he made in his 1897 book belonged to 10 years ago.

¹⁴In the same period records, the amount of sea baths is 39 in total including Bayezid 4, Yeniköy 3, Anadoluhisarı 11, Üsküdar 4, Gâzîköy 5, Ada 7 and Makriköy 5 (Öztel, 2013).

¹⁵It is thought that they are limited to a partial area because they contradicted before and after (Yılmazkaya, 2002).

guidebook that examines 50 baths from 57 total active, and Kuruçay's (2012) study on baths within Istanbul's 100's series can be added (N. Ergin & Erozan, 2012; Eyice, 1997; Haskan, 1995; Kuruçay, 2012; Müller-Wiener et al., 1977; Yılmazkaya, 2002). As a result, all these statistical data collected in Table 1 to be read together with population parameters by associating with city development and use of baths¹⁶. After regular chart based on the population growth and development of the city regarding baths number till 18th century, 19th century population growth had increasingly continued in the 20th century and by different reasons many baths had become ruin or lost their original function and character. Furthermore, Haskan's extensive research indicates that the preliminary findings have partial values in scope and content.

Table 1. Population Parameters and Number of Baths

Date	15.yy	16.yy	17.yy	18.yy	19.yy		20.yy			
	15th	1553	17th	1752	1883	1887	1935	1952	1973	1995
Bath	32	100	168	182	169	175	150	91	193	237
Source	E.H. Ayverdi (1953)	Ahmet Refik (1935)	E. Çelebi (1640s)	Hamam Yoklama Defteri (1752)	Nüfus sayımı (1883)	Ali Cevad (1897)	Osman N. Ergin (1948)	N. Köseoğlu (1952)	Şinasi Akbatu (1973)	M.N. Haskan (1995)
Population	100.000 (1480)	400.000 (1535)	700.000 (1700)	-	873.565 (1885)	1.030.234 (1896)	741.148 (1935)	983.041 (1950)	2.132.407 (1970)	6.629.431 (1990)

Negative Factors and Effects on the Development of Baths

It seems that there are many different factors that affect the development of the baths in a negative direction. Foremost among those factors is the changes of socio-cultural habits and preferences within the current physical conditions. Therefore, it can be said that, without of the new constructions, natural disasters such as fire, earthquake, and the new manner for bathing together with modern life, economic troubles of the period, poverty, war, critical political decisions and privatization has been effective in the disappearance of existing baths and bathing culture (Çelik, 1986; Haskan, 1995; Kafli, 1950; Müller-Wiener et al., 1977). Regarding baths reaching about 195 according to the records of baths in 1766, because of the fuel and water supply difficulty, and economic reasons, III. Mustafa impose restrictions on the construction of baths in 1768 (Eyice, 1997; Yaşar, 2014). This restriction on the construction of baths was applied until the reign of Abdülmecid (1839-61) provided that lignite was used instead of wood (Kuruçay, 2012). According to statistical magazine record in 1916, the baths number had reached to be as many as 178, but it is understood that the past glory disappears specially it was compared with the increasing urban population at that period (Öztel, 2013; Yaşar, 2014). With the foundation of the Republic, Ankara declared as new capital and the difficult conditions not just within İstanbul but national

¹⁶There are many different conclusions about the population of Istanbul by travelers, researchers or historians (Bozlağan, 2012; Jacoby, 1961), (Toprak, 1993).

crisis during this period; accordingly, drastic population change were the factors that affect baths' situations. Some of these negative effects can be seen in the study of Baykara, dated 1956, which depicted the current situations of the baths. While discussing the idle situation of the Dökmeciler bath, which built by Sinan, and the fears spreading around bath during its destruction, the reasons behind the destruction of Istanbul baths, which were decreased from 250 to 85 active in that period, were criticized. One of the effects of the destruction of the baths was fragile resistance of struggling with epidemic diseases¹⁷. Besides, against the common problems of the 20th century, recognizing the baths became mostly personal property as national value, regulations and works by local associations and governments such as tax exemptions could also be seen positive effects on the baths (Baykara, 1956). In the study conducted by Köseoğlu on the 91 baths, transferring of overall baths belonging to the general directorate of foundations to the personal property was mentioned as an important factor leading to the destruction of the baths (Köseoğlu, 1952).

Even if the baths were damaged over time or by natural factors such as fire or earthquake in the past, these structures which were in demand with the profits and necessities were repaired. However, the fire that affected Fatih neighborhood on 1917 caused the Macuncu ve Saray baths in Çapa, Çavuş baths in Bekirpaşa, İmharor baths in Langa to become idle situations (Ünver, 1942). 209 fires were recorded in Istanbul between 1633-1852 in 220 years, and 209 fires between 1853-1908 in 54 years. From the declaration of the 1908 Constitution until 1922, nearly a hundred fires broke out. There were 1111 houses, 118 shops, 6 mosques along with 3 mosques fired in İshakpaşa fire (1912) (Şehsuvaroğlu).

It can be seen that the urban transformation decisions applied in the middle of the 20th century directly influenced the historical topography of the city and the disappearance of the baths (Kalkan, 2001). During the Menderes period in 1950-60, the baths were also affected by the great destruction that took place especially in historical parts such as the historical peninsula, Karaköy, Beyoğlu and Eyüp. Murad Pasha Bath demolished in 1956, Fındıklı Bath demolished in 1957 or Çemberlitaş bath lost some of its part summarizes the situation after the devastating constructions within the scope of urban planning (Çetintaş & Dervişoğlu, 2011; Kuruçay, 2012). It is known that Imharor bath in Yenikapı, İbrahim Paşa bath in Saraçhanebasi and Azepler bath in Unkapanı were destroyed during the roadworks of Atatürk boulevard (O. N. Ergin, 1948; Güncüoğlu, 2009). Within the "destructions of Menderes period", Arasta bath behind the Sultanahmet mosque; Cerrahpaşa, Çukur, Çelebi Mehmed Aga bath because of the construction of the Vatan street; Haseki Sultan bath because of the Millet street; Küçükağa bath in Sirkeci because of the coastal road and many other historical monuments were destroyed (İstanbul'un Kitabı, 1958). Kalkan (2001) emphasized that 40 of the 73 baths active in 1952 (Kalkan, 2001).

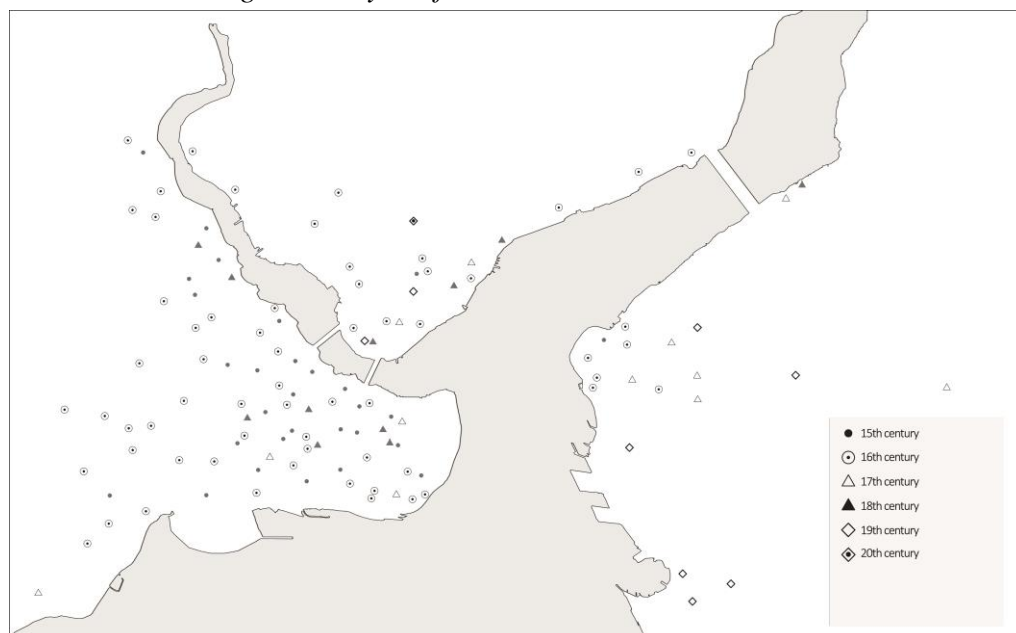
¹⁷With the mobilization during World War II, the emergence of the typhus epidemic, to clean crowded groups such as soldiers and especially in the barracks, baths had become prominent. Besides, the municipalities have opened free baths for cleaning the people against the typhus outbreak, and thousands of people who were sent altogether to these baths in order to be cleaned were reflected in the press in July 1943 (Sevilay, 2015).

In the systematic study of the baths located on the seventh hill of Istanbul, Ünver emphasizes the insufficiency of information about some baths and the uncertainty of the identity of the ruins, and therefore it is possible that there are baths unknown still (Şehsuvaroğlu, 1955; Ünver, 1942). The Byzantine bath in the Kartal district and the Turkish bath in the Rezzan Has Museum are examples of bathing remnants found in excavations.

Mapping Analysis on Istanbul Baths

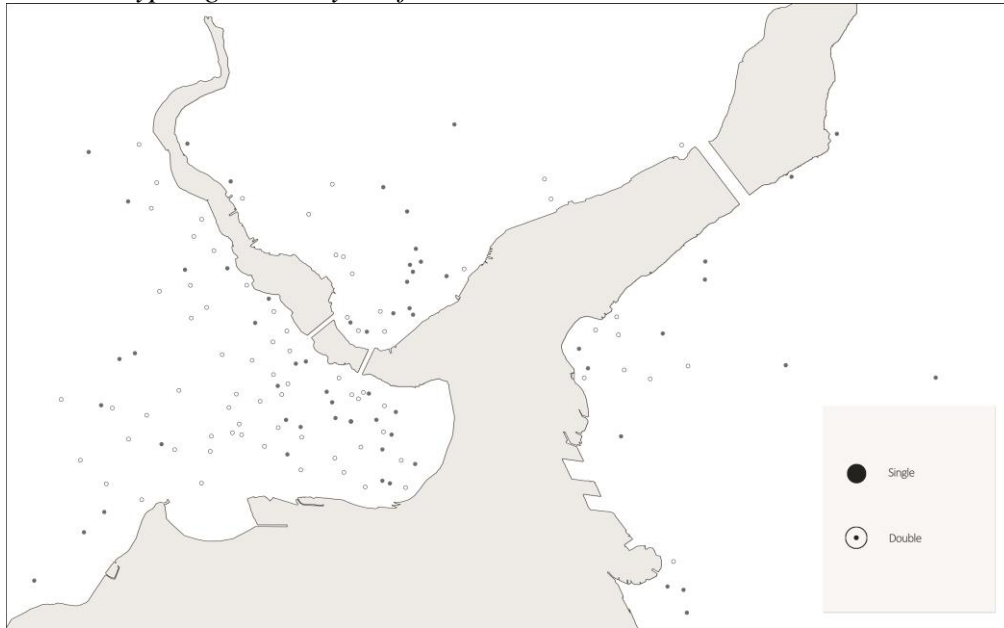
In order to discuss the developments and present conditions of Istanbul baths, with the collected data and field studies maps were created. These maps contain overall distribution, current using types, chronological layers, and simply typological characteristics. In the overall map, approximately 235 hammams are shown with their distribution in the city. The distribution mapping in Table 2, besides Galata, Uskudar and Bosphorus as historical settlement areas, has mainly concentrated in the historical peninsula. Considering that the baths are an important element of social life, this distribution emphasizes the importance of the historical peninsula which was the center of the city for centuries. Understanding of the distribution within the city depends on the understanding of the characters of the regions over time. Therefore, the life of Tahtakale or Mahmutpaşa baths within the commercial character environment, the palace baths in Eyüp or Bosphorus, the small neighborhood baths or the monumental complex baths all point to districts with different characteristics in the city. Besides, the proximity to the public areas, the water infrastructure, the neighborhood structure and the population were influential on the distribution of the public baths.

Chronological mapping in Table 3, arranged according to the construction dates of the baths indicates dates from the 15th century to the 20th century with legends. When examined preliminary researches, classifications can be seen in the early, classic, and late periods or according to centuries and rulers. This map also points to the urban expansions and new settlements, as well as construction activities related to baths with layers of centuries. In this direction, the urbanization which was concentrated in the historical peninsula, Galata and Eyüp borders in 15th century, spread to a wide area with Üsküdar and Bosphorus borders as of the 16th century. Despite the uncertainty of the construction dates of the baths that have been demolished or seriously repaired and which we could not reach their inscriptions, it is seen that the construction of the baths in the 16th century together with the population and development of the city became prominent. Besides, it can be seen that the baths have lost their former significance and the construction of the new baths has almost stopped towards the 18th and 19th century.

Table 2. *Overall Distributions of Istanbul Baths*[illegible]**Table 3.** *Chronological Analysis of Istanbul Baths*

It will not be wise to admit that a habit, which is valid in different continents for centuries and is represented by a large number of enterprises, has a single form and application. The rules and regulations for baths and bathing should differ according to time, place, culture” (F. K. Yegül, 1995). As a model for Istanbul baths, some sources show Zeuxippos Baths in Byzantine period. In a wider perspective, it also draws attention in many examples, such as the Çardaklı bath, where baths from the Roman and Byzantine are taken as examples (Caraher et al., 2008; O. N. Ergin, 1948; Kafescio_lu, 2009; Kalkan, 2001). One of the basic typological features is the distribution of Istanbul baths built as single and double according to the usage type as shown in Table 4. According to the typological distribution on the map, there are majority of double baths serving men and women separately. This situation shows that baths which provide daytime service are preferred rather than half-time use in terms of necessity. It was also seen that single baths provided to the facilities such as tekke, school, hospital, palace, barracks in a special purpose, turned into public bath in some situations. Apart from that, economic savings, neighborhood size and population level, or dominance of ports and trade areas, were influential in the construction of single bath types.

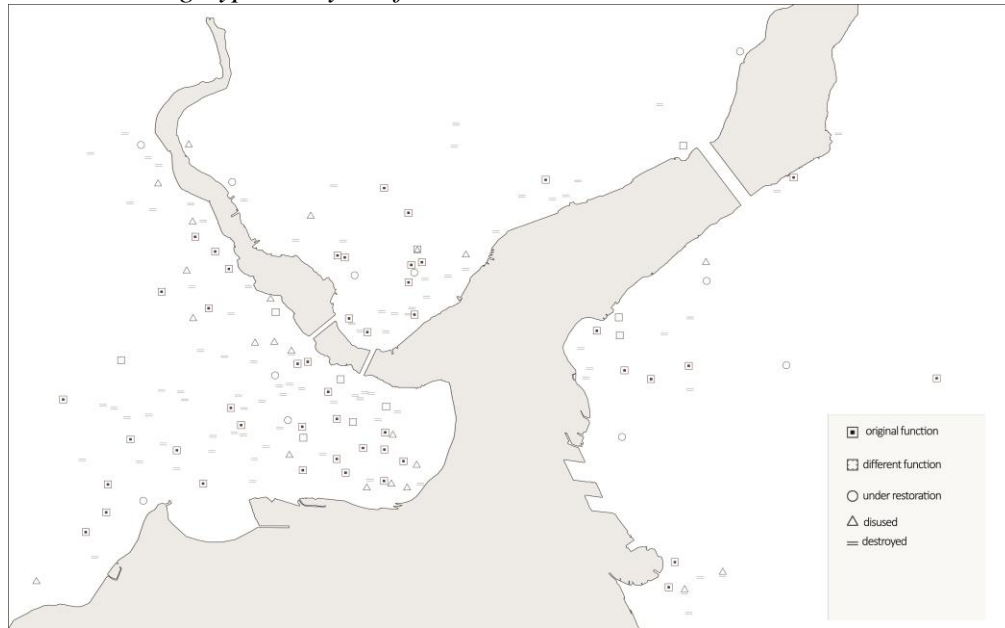
Table 4. *Typological Analysis of Istanbul Baths*



Another characteristic of the baths located in the city is its integrated structure with the neighborhood. In a city equipped with baths with the qualities that everyone can use without regard to ethnicity or gender, these facilities serve as a social institution beyond physical or sanitary structures (Es, 2010; Kalkan, 2001; Mantran, 1990). Therefore, all these social and physical relationships created with their surroundings add value, spirit beyond the basic templates in the formation of these structures.

Usage types analysis, unlike the others, focuses on its present situation with changes over time. According to fieldwork and mapping in Table 5, five situations have defined for the baths; maintain the original function, transformed to different using, under restoration, disused and destroyed. From this map, more than half of baths have been destroyed, and many of them were in historical peninsula. It is seen that the use of baths in different functions such as warehouses, or commercial was caused by idle situations or transformation in their close environment and values kept them active. Although such transformations even bad have often caused structural damage, many baths have reached present, and prevent themselves from destruction. In particular, cultural and social responsibilities have become considerable, as in the recent transformations in Bayezid, Ortaköy and Küçük Mustafa Pasha baths. On the other hand, there are still many baths that are idle in very important points of the city, and their destruction is increasing with time. The numbers and distributions of the baths in the restoration process show that the relevant researches can contribute to process with the current and comprehensive data. Baths maintain their original function, have quite serious problems and many of them are standing with variable dynamics like tourism and many disused baths are under bad condition. On the other hand, there are still baths working in neighbourhood just like in old times.

Table 5. *Using Type Analysis of Istanbul Baths*



Baths were identified from different points of the city in order to illustrate the current status of the baths. The determined baths were analyzed with drawings, photographs and texts with close environment data.

At first, with only an arched courtyard wall parallel to the street Köçeoğlu bath is a good example for many baths that have left just some part or memories in present. This bath, which was active and one of the most attractive baths in the 1960s, was demolished and its place transformed firstly parking area. It was built

in 1840 in the name of Agop Köçeyan who was a goldsmith of palace. Haskan stated that Köçeoğlu mansion was located opposite the bath and that it was once the cleanest bath in Kadıköy (Haskan, 1995). According to the encyclopedia of Istanbul including the spatial descriptions of bath, Köçeoğlu is the single bath (Koçu, 1958). Today, as seen in Figure 1, the only representation of the bath, because stores and apartments built on its place, is arched remains parallel to the tramway street.

Figure 1. (left) *Bath in the Pervititch Map* (Pervititch, 1943), (b) *Street and Wall*



Sadrazam Mahmut pasha palace's bath, the Sengul bath, was later converted into a public bath. This bath which was built in the 15th century was used as a public bath until 1984 and disused in present (Figure 2). The old building of Günaydın Newspaper located next to the baths was destroyed today as part of a hotel project and the place of it that is used as parking area. The cistern that emerged between the bath and the parking area is representing another historical layer. It is seen that around the bath, which was shown in the map of Goad, there were large scale buildings such as madrasa, tekke, school, mosque and small-scale wooden houses. The street leading to the Alay pavilion in front of the bath is a very important crossing point as it was in the past and tourism and administrative structures have gained importance in the vicinity in present.

Figure 2. (up and left) *Cistern behind of bath*, (up and right) *Entrance Facade of Bath*, (down and left) *Plan (Redrawn from Ayverdi)*, (down and right) *Bath in the Goad Map*





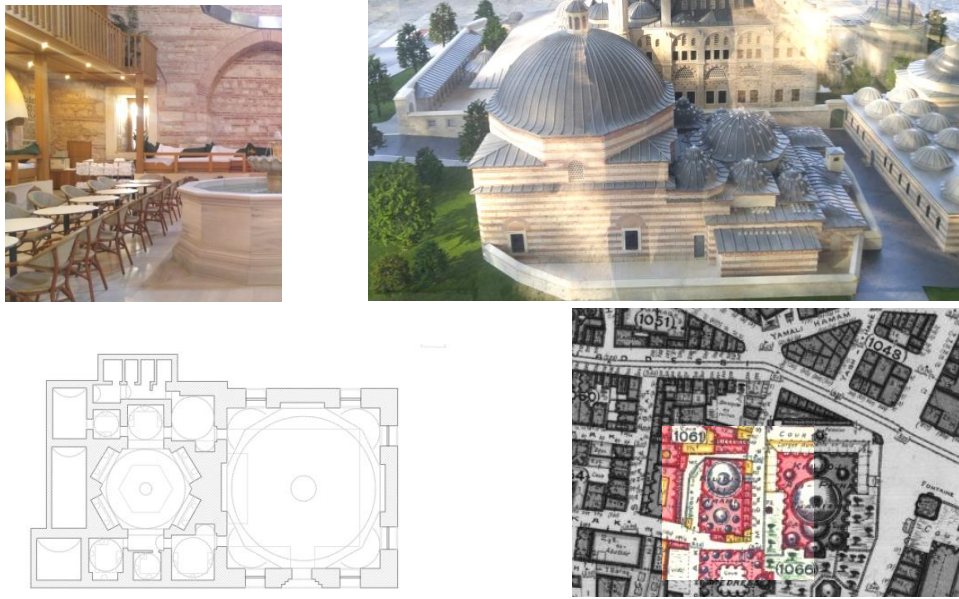
Küçük Mustafa Pasha Bath shown in Figure 3, built between the Cibali and Ayakapı with the form of a double bath in the 15th century, was dedicated to the mosque, school and imaret of Pasha in Bursa (Haskan, 1995). The dome that covers the entrance section of the men's part in the bath, which has a stair in entrance, has a dominating character with its size. In the bath representing the classical Turkish bath plan scheme with the section's regulation, the women section was arranged in smaller sizes and the entrance was provided from the side street. In 1960, the women's section and in 1992, the men's section was closed, after that remained idle for 10 years, it was restored to be used in cultural events in present (Kudde, 2007). The baths were used as exhibition space in 14th and 15th Istanbul Biennials.

Figure 3. (up and left) *Istanbul Biennials in Bath*, (up and right) *Bath from the Furnace Facade*, (down and left) *Plan (Redraw) (Kudde, 2007)*, (down and right) *Bath in the Pervititch Map (Pervititch, 1943)*



Kılıç Ali Paşa Hamami, built by Architect Sinan in Tophane in 1583, is an important complex bath located between the mosque and the madrasa. In addition to reflecting the historical-cultural values in Tophane, it has quite different characteristics in terms of its plan. Unlike the general schema, two different entries were created from the fairly large designed entrance section (cold room), to the main bathing section (hot room), and therefore ring circulation that we encountered in the roman baths was provided. With the hexagonal plan of main bathing section, cleaning room's and the toilets' position, bath are also separated from the general typology of Turkish bath. Restoration of the bath to maintain its original function was awarded Europa Nostra prize in 2007.

Figure 4. (up and left) *Entrance*, (up and right) *Model*, (down and left) *Plan*, (down and right) *Bath in Map* (Pervititch, 1943)



Conclusions

The Istanbul baths, which are examined with historical development, have been analyzed on the macro scale through maps and structures on the small scale. The large number of examples that basically assume the same function, in essence, the uniqueness of these baths can base on social relations together with architectural diversity. Therefore, the findings about the old times show the relation established with the city and the references applied refer to the depths of these cultures. By evaluating the different variables in the field studies, the interventions to protect the values of the baths have been determined through the cases. Particularly, it has been seen that the lack of social and physical infrastructure and planning of the restoration process affects the success of the projects significantly.

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