



Historical Evaluation of Public Toilets as Public Spaces

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Abstract

Throughout history, the development level of public toilets is one of the most direct indicators of the level of civilization of societies, cities, and therefore public spaces. The transformation and evolution of public spaces not only give shape to daily public life but also lead society to more long-term cultural and social progresses by influencing their experiences, habits, and beliefs. Today, as one of the most important public spaces, public toilets' development is directly related to the probable global pandemics in case of a lack of sanitation and hygiene. This article analyzes the social, economic, cultural, political, and technological effects of the development of public toilets as public spaces throughout history to put forward a frame in which we can observe the impact of public toilets on human civilization.

1. INTRODUCTION

The term "public" refers to the collection of people who form a state, nation or community; their ethnicity, race, gender, and various characteristics of the human population, while the term "public space" is used to describe areas or places that are accessible and used by individuals.

The definition of public space was first made in 1962 by the German philosopher, sociologist and political scientist Jürgen Habermas. According to Habermas, it is the public domain that "private individuals exert their wisdom around a common issue that concerns them, engage in rational discussion, and thereby define the common position of the subject, the means, processes, and spaces in which they form the public". Habermas (2000) defined that, "Public space is the concept used in modern society theories to refer to the common social activity in which thought, rhetoric and actions were produced and developed to determine the common good of society" [1].

Throughout history, the nature of public spaces has been associated with the social, economic, cultural, political, technological values of the society that forms, uses and makes sense of them. The interaction between public space and society is mutual. The change in the way communities lifestyle has resulted in the transformation of public places into formal, functional and semantic spaces, while the experience of individuals in transformed public spaces has led to changes in public life.

Public toilets are important public spaces that people compulsorily use everyday life. The evolution of public toilets and public spaces are intertwined. This article analyzes the social, economic, cultural, political, and technological impacts of the development of public toilets as public spaces throughout history.

2. THE PUBLIC TOILET

2.1. The Description of the Toilet

The discharge of fecal and urine, or the discharge act, is one of the daily natural needs of all mammals, and therefore human beings, just as they need to eat and drink. Because hunter-gatherer human societies don't have permanent settlements, they have a need to evacuate, like all other animals, in nature. The emergence of cities not only altered social and moral values, but also required hygiene conditions, which forced coexistence as a society. With urbanization, the evacuation began to mechanize. The development of sewage and water systems is also an important indicator of civilization.

The toilet is the place where the drain is provided by sewage system. Toilette, "toilette", is a French word and is used in Turkish as the name of both the action and the name of the space. The acronym "WC" was also recognized as an abbreviation for toilet places around the world. As a global icon, many redirect sign designs use WC letters directly. The abbreviation WC stands for the initials "Water Closet" in English. In medieval times, European toilet spaces were designed to be resolved in built-in cabinets in space, a name that has been inherited from that period.

2.2. The Rise of Public Toilets in the Antiquity

The first traces of the toilet and sewer system were found in Egypt, Mesopotamia, the Indus Valley, Asia Minor, Crete, and the Mycenaean civilizations (p.103) [2]. Around five thousand B.C., wastewater canals were found in the ancient city of Byblos, north of Beirut. At the court of Sargon I, king of the Acadian who ruled the Mesopotamian region in the middle of three thousand B.C., there were horseshoe-shaped toilets (p.9-11) [3]. This form is the earliest known toilet type example. In the three thousand B.C. Indus Valley, the Harrapans built canal-linked toilets with wooden or brick seating (p.1) [4].

By the middle of the second millennium B.C., it was revealed that flush toilets were used at the Minos (Knossos) Palace in Crete (p.10) [5] (Figure 1). In seated toilets in these areas designed as a separate interior, the flush effect was provided by spilling water into a channel connected to the underground sewer system. The rainwater accumulated on the roof was moved to toilets and bathrooms by canals (p.1) [4].



Figure 1. Knossos Palace restroom, Crete, around 1700 BC (p.10) [5]

According to Egyptian religious beliefs, the needs for life, such as food, drinking, and toilets, were essential in the afterlife, and some tombs were built in the form of houses in Saqqara (2890-2636 B.C.) which contained toilets (p.1) [4]. In Anatolia, a modern fountained stationary toilet was found, belongs to Urartian dating back to the 7th century B.C., and was a very advanced design from its period (p.2) [4]. As planned builders, Urartian first built the sewer system and then the city.

A significant change in toilet structures occurred during the Roman period. Before that, toilet structures were singular and for private use. The "latrine" toilets were designed and constructed as public places where mass use takes place. Latrines were places of socialization where politics was spoken, daily gossip was done, and even business deals were achieved [6].

Latrines have six different plan diagrams: peristyle, extradural, round, U, L, and I. They were built next to the baths to reuse the wastewater of them and clean water from the roof was provided through the water pipes. The structures were mostly made of stones whereas the toilet seating units were marble or wood. Seating plates were carried over the consoles attached to the wall and circular holes had been opened on the plates. The lower part of the plates is supported by another plate, which has a hole in it, aligning it with the top hole. The hole in the bottom section was built to serve the purpose of the lustration. A clean water canal was located just outside the area where users step foot. The perceptions of hygiene and privacy in latrines were very different from those of today. People shared sponges with sticks to clean their backs (p.17) [4] (Figure 2& 3).

The indoor aesthetic is also prominent in these structures. Depending on the level of social welfare, the Romans decorate latrines walls with mosaics featuring gods and goddesses motifs and floors with scenes from everyday life [7]. The most spectacular period of the latrines was the second century A.D. In the fourth century A.D., separate latrines were used for men and women, and by the sixth century A.D. the use of latrines had ceased [6].



Figure 2& 3. Latrine top view and a visualization,
<https://metropolistr.org/kazi-detay.aspx?mid=37>

The toilet structures of antiquity were seating units with a hole. In that period by means of a sewage system or portable pottery placed underneath, the waste was removed from the living spaces. In the residences of the nobles and the rich, the toilets were carefully designed as separate rooms. The transformation of the toilet into a public space during the Roman period not only led to structural and technological advances but also to social transformations.

2.3. The Fall of the Public Toilets in the Medieval

The Roman period's glorious public toilet structures did not last in medieval Europe. The medieval period lasting nearly a thousand years was a time when western culture was going backward in terms of sanitation and living conditions. Outbreaks such as the Black Plague spread in unhealthy environments, and religious beliefs have prevented the need for cleanliness in public life.

In medieval Europe, toilet spaces were only located in palaces, noble houses, forts, and monasteries. Ordinary people did not wash for years due to religious pressure and poor living conditions. Monasteries were the guards of knowledge, culture, and cleanliness, and the post-Roman culture pioneers of water supply and drainage in those times. During this period, monasteries were generally built next to rivers to remove waste (p.28) [8]. The toilets built on the exterior walls of the fortresses during this period had no sewage system, and the waste falls directly below and formed a stinking heap over time (Figure 4).

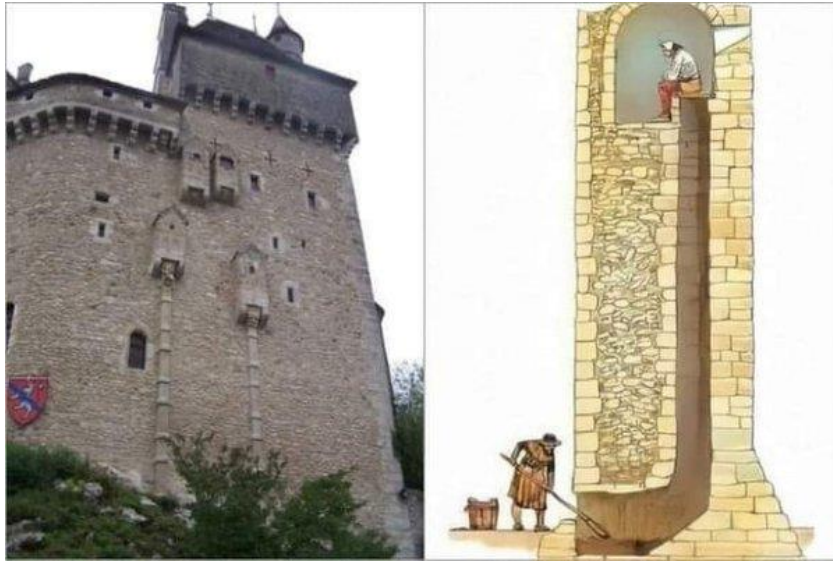


Figure 4. Duct and channel wardrobe toilets in medieval castles
<https://www.vintag.es/2021/07/medieval-castle-toilet.html>

Throughout the 14th and 15th centuries, the infrastructures of European cities were insufficient so people continued to flush their waste out of the windows of houses. Pottery pots were often used during this period of inadequate toilet structures and sewage systems. While the streets were in a state of filth and stench, and diseases had increased, flower waters and perfumes had become commonly used in Paris to prevent only stench, rather than permanent solutions. During the Middle Ages, many articles were written about toilets and sewage in European cities, and even laws were introduced to prevent pollution, but these laws could not be implemented primarily because the infrastructure was not improved (p.20) [9].

On the other hand, Turks have converted to Islam in masses since the 10th century. The emphasis of Islam on cleanliness and privacy has been very effective in the development of toilet culture. Unlike the seated toilet system in Western culture, the system 'to squat' is common in Islam. While human waste was directly dumped in medieval Europe on the streets, the Anatolian Seljuks involved toilets in their buildings. The toilets in the Anatolian Seljuk madrasa and caravansaries were all located at one corner of the façade (Figure 5). Caravansaries are public structures built for the accommodation of caravans, where, apart from their resting and eating needs, their bathing and restroom are also met for free. The toilets were usually spaces with clean, dirty water canals, consisting of an open toilet system or three to four cabins (Figure 6). There are also private toilets in the palace and major buildings of the period (p.215) [10].

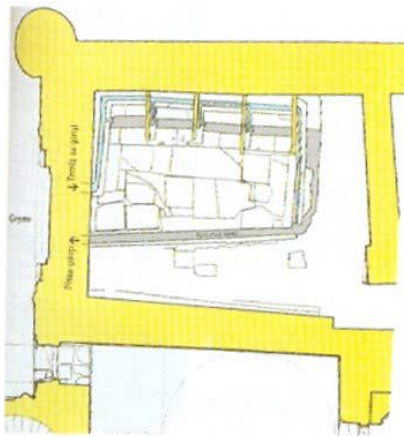


Figure 5& 6. Sivas Sahib Ata Madrasa toilet plan and photo [10]

2.4. The Reinvention of Toilet in the Renaissance

With the Renaissance (rebirth) beginning in the 14th century, Europe moved away from the dark, religious pressure of the medieval era, and began to develop in many areas. The Renaissance movement had been a pioneer of the rise of Europe through trade and geographical exploration. As a part of this rebirth movement, they translated ancient Roman and Greek texts in the fields of art, science, philosophy, and architecture. They disseminated and shared knowledge with the invention of the printing press.

In the 16th century, the Renaissance movement spread from Italy across Europe. The Reformation movement of religion followed. Martin Luther (1483-1546), a theologian and monk, wrote books critical of the Catholic Church, translated the Bible into German, and led the establishment of the Protestant Church. The clergy lost their medieval unquestioned power. The wardrobe-type toilets of monasteries, which were a source of diseases for the environment, were no longer built. Advances in science and medicine had also helped to promote the importance of hygiene. In this era, with the loss of the power of the clergy and the royal aristocracy and the rise of trade and geographical exploration the European society gained power and wealth. Toilets had been started to add to rich homes (p.3) [8].

In 1596, Sir John Harington (1561-1612) designed a toilet for Queen Elizabeth, which had a seat, a cistern system, an overflow pipe, and a valve (p.72) [11] (Figure 7).

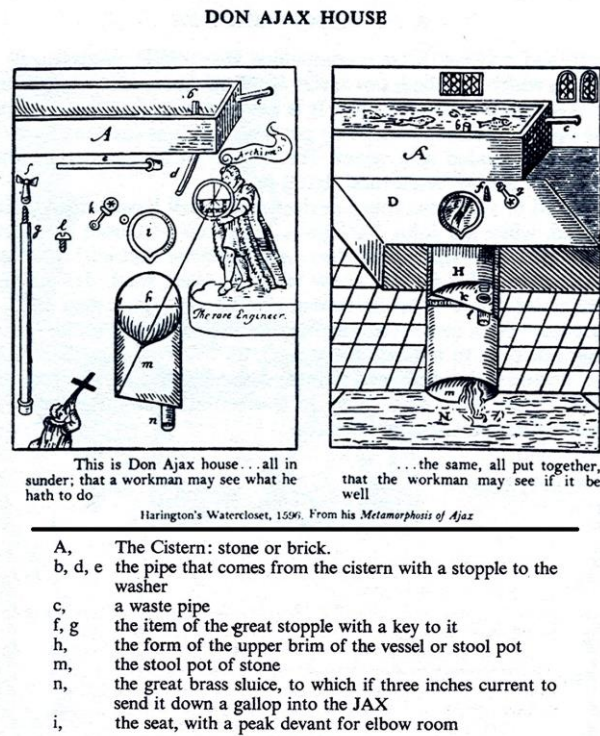


Figure 7. Sir John Harington's toilet design, (p.72) [11]

Sir Harington's design was so detailed but it began to use by the public barely two centuries later. In the pre-modern era, people continued to use bedpans and throw their waste through the windows to the streets of the city. In the 17th century England, after the plague outbreak in 1666, a fire destroyed the slums of the city so they rebuilt according to the sanitary rules. Despite all these advances, bans, and laws, environmental cleanliness and hygiene could not be achieved in European cities until the 19th century (p.52) [3].

On the other hand, by the time of the Ottoman Empire, toilets had begun to be constructed in both houses and public places. The Western traveler Joseph Grelot wrote in his 1680 published travelogue that, in many districts of İstanbul there were public toilets called 'edephane' (p.196) [12]. In İstanbul, Roman-era waterways and cisterns continued to be used during the Ottoman period. For example, the famous

Yerebatan Cistern was built in 526-527 by the Byzantine Emperor Justinian I, and was used for some time during the Ottoman period. Ottoman Empire established the toilet foundation in 1667. At that period the construction, maintenance, repair, and cleaning of the public toilets were provided by the foundation for the benefit of the public (p.100) [13].

Safranbolu houses, which have survived since the 19th century, set an example of how domestic toilet spaces are resolved in Turkish culture and residential architecture. The ablution and toilet room is located on the middle and upper floors (Figure 8). It is usually a cantilever, covered by a wooden curtain which is called 'daraba' (p. 140) (Figure 9). The toilet is separated from the ablution area with a door. The 'alaturka' toilet has a triangular hole (usually) that is connected to a pit with a wooden canal (Figure 10). There is also a sewage system in the town which flow into the creek (p.237) [14]. The word *alaturka* is derived from the Italian phrase "alla turca", that is, "like a Turk, Turkish style". According to the old Turkish tradition, habit, and way of life, it means appropriate. The difference between the closet and the *alaturka* toilet is the sitting position. There are studies showing that the use of *alaturka* toilets is healthier in terms of human physiology and functioning. On the other hand, closet style toilet has been accepted as one of the modern life indicators.

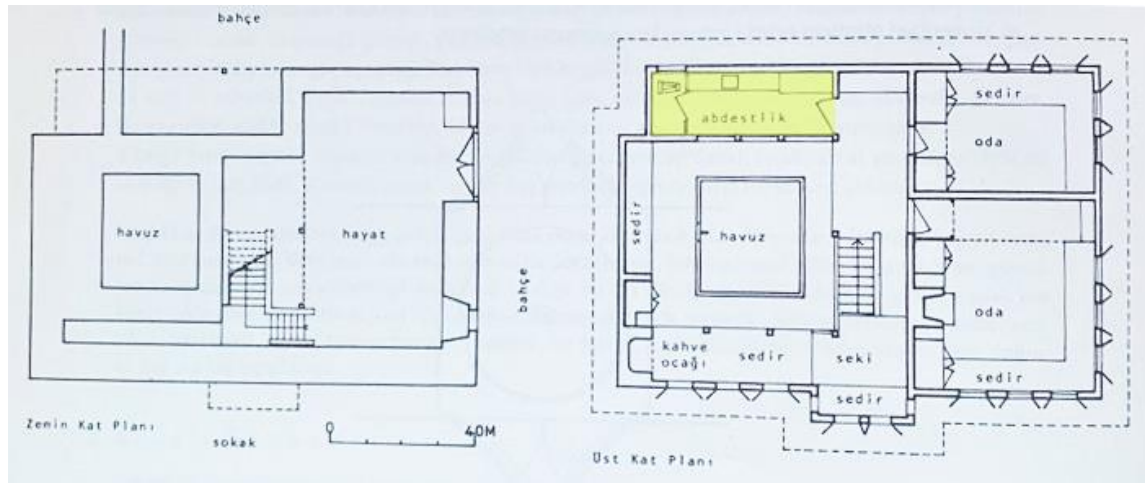


Figure 8. Plan schemes of a Safranbolu house and toilet room on first floor, 1989 (p.22) [14]

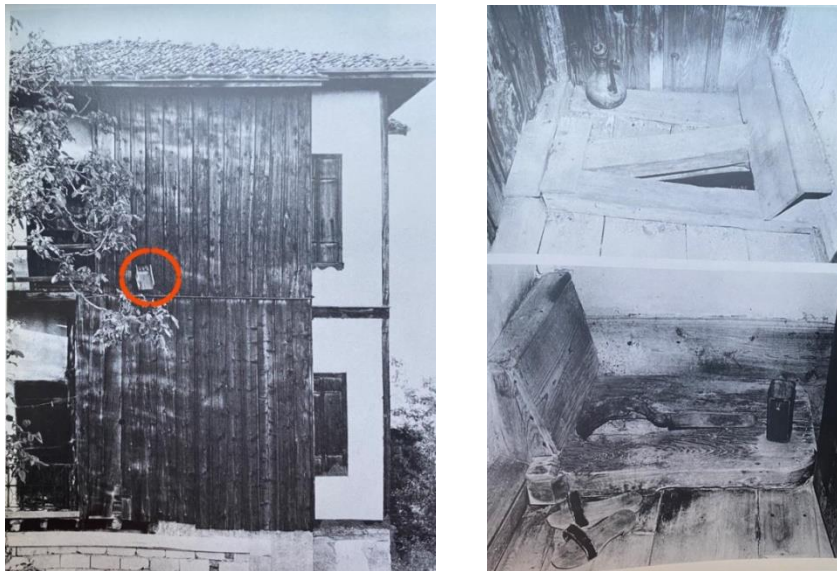


Figure 9& 10. The wooden outer wall of ablution and toilet (*daraba*) and wooden toilets, 1989 [14]

2.5. Modern Toilet Prototypes in the Age of Enlightenment

In 18th-century Europe, the potty was still widely in use, but the mentality on privacy had begun to change. Famous designers like Hepplewhite and Sheraton had designed wooden furniture which hides bedpans inside. Although these furnishings provide image confidentiality, they are not cleared until morning, so they could not solve the bad smell that spreads into the bedroom (p.113-120) [11] (Figure 11, 12& 13).

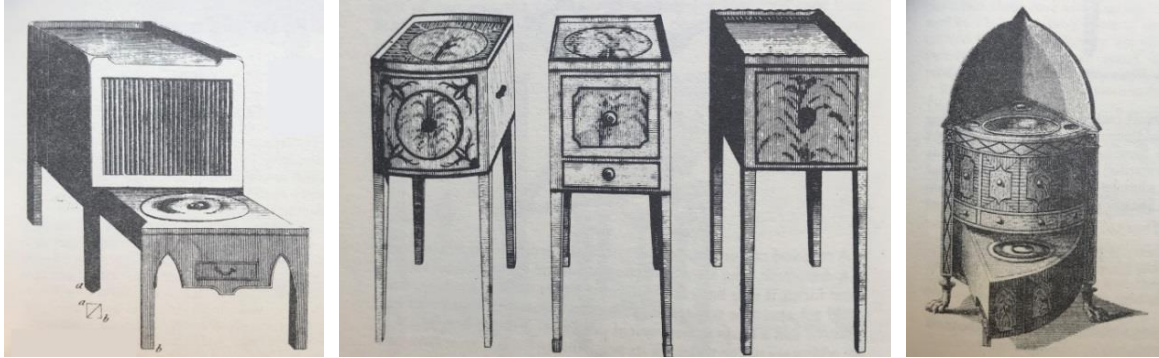


Figure 11, 12& 13. Night Table, Hepplewhite, 1787; Potty cabinets, Hepplewhite, 1787; Night Sink Cabinet, Sheraton, 1803 (p.113-120) [11]

In 1775, 179 years after Sir John Harington, Alexander Cummings, a London watchmaker, patented the water-flushed valve toilet. The main characteristic of this design is that Cummings had blocked the smell with a lid that he placed between the seating and the dirty water canal. In 1778, another British designer, Joseph Bramah, developed Cummings' valve by turning it into mechanics. Bramah's company, which produced 6,000 units in the first year of this design, continued production until 1890 [3, 11] (Figure 14& 15). Cummings and Bramah's designs are considered prototypes of modern toilets.

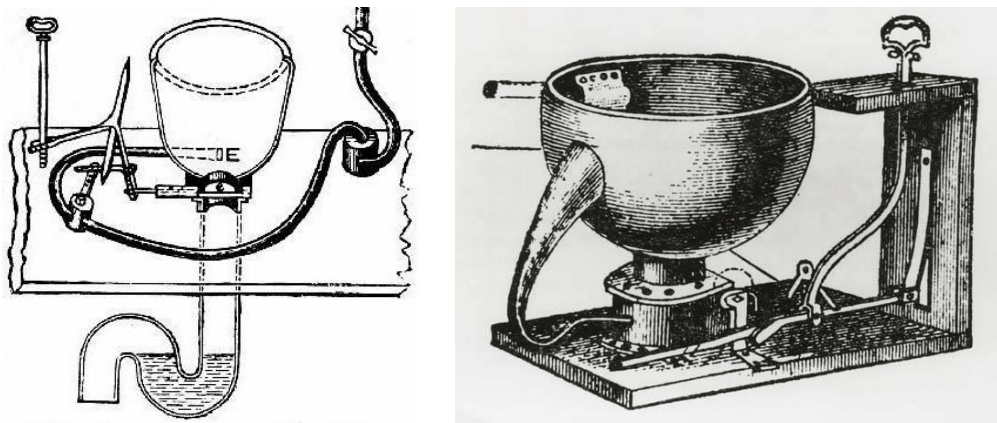


Figure 14& 15. Alexander Cummings' patented valve toilet design, 1775; Joseph Bramah's patented valve toilet design, 1778 (p.107-108) [11]

2.6. The Emergence of Public Toilets in the Cities of the 19th Century

The Industrial Revolution had significant impacts on public life, environmental health, and the expectations of the middle class for better living conditions. In cities, there is no longer any tolerance for excrement or any dirt in living environments. By the end of the 19th century, public toilets finally began to be constructed as planned spaces and structures.

The toilet flush system was further developed by George Jennings. He designed a slow flow of water that cleans the closet after the first fast flow of the flush system. Jennings made a very important breakthrough in 1851 and became a pioneer. He called his closet design "monkey closet" and take out a patent for it

(Figure 16). He installed these closets to restrooms inside the Crystal Palace which was built for the grand fair in London. During the fair, more than eight hundred thousand people mostly female visitors, used the toilets and paid a penny for each use. For a penny, they used a clean toilet, towel, comb, and polished their shoes. After the fair closed, the toilets were not removed and proceeded to raise over £1,000 a year (p.200) [11].

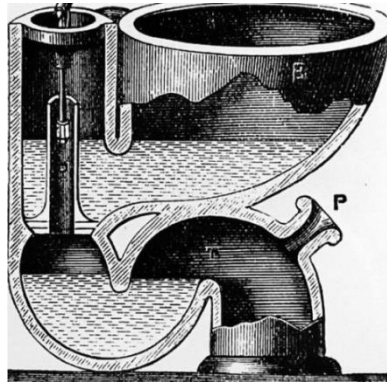


Figure 16. The closet used in the first public toilet of 19th century London <https://www.bbc.com/news/uk-england-london-59785477>

Jennings' success at the Crystal Palace has prompted the opening of public toilets throughout the city. In February 1852, public toilets for men and women were opened. In these underground restroom spaces, the toilets were separated by wooden cabins (Figure 17). They were designed and built with very high standards for aesthetics and finishing materials; like marble and copper. In present-day London, it is still possible to come across these 19th-century public restroom spaces that had elegant wrought iron handrails going down (Figure 18).

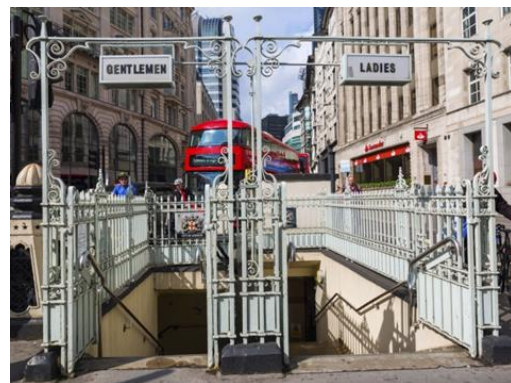
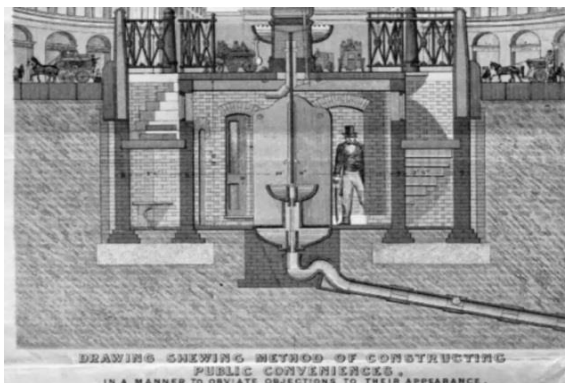


Figure 17. London underground public restrooms, 19th century
<https://www.vintag.es/2022/02/public-flushing-toilets.html>

Figure 18. Public restrooms from the 19th century in today's London.
<https://www.jmibathrooms.co.uk/the-history-of-bathrooms-and-toilets-part-2-early-modern-era/>

By the turn of the 20th century, European cities had many public urinals located at the junctions of major streets, in parks and stations, available only to men. These public urinals, which had no doors, were spaces separated by panels and had only a drain on the ground, and they contributed immensely to the sanitation of the city (Figure 19).

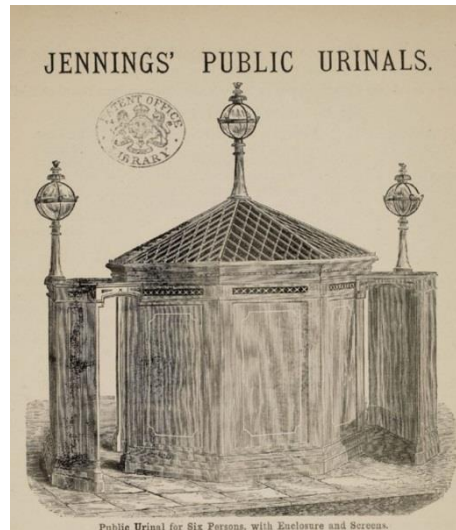


Figure 19. Public urinals, 19th century,
<https://www.vintag.es/2022/02/public-flushing-toilets.html>

2.7. The Public Toilets from the 20th Century to the Present

In the 20th century, the modern cities of the world had urban infrastructure systems, installed the toilet spaces in buildings, and public restrooms became common as the contemporary urban life needed. Toilet structures had entered a period when they were designed and built, reflecting not only their understanding of design but also the social, economic, and cultural situation in society. The public toilet, designed by the famous architect Adolf Loos, is considered one of the most beautiful examples of the 20th century. The public toilet which was built underground in the Graben Street of Vienna in 1905 is still in use today (Figure 20).



Figure 20. Public restrooms designed by Adolf Loos, 1905, Vienna
<https://www.wien.info/en/art-nouveau-toilet-on-graben-131666#>

Two world wars witnessed by this century led to the rapid development of technology and production as well as changing forms of governance and economic stability after wars. Those all enabled new consumer systems and global markets. Consumption is no longer intended solely to meet the need. The value of design had increased in the capitalist order, where alternatives to consumer products have multiplied. The design had improved rapidly in architectural, spatial, and industrial products and materials.

In the 20th century, mass production and the sale of brands were highlighted in broad markets. In the 19th century and the beginning of the 20th century, mostly by craftsmen, design and production in line with maximum function and aesthetic concerns were at the forefront. In the 20th century, the design of products

and places was designed in accordance with the art and design currents of different periods. Because of the negative effect of the Second World War on the economy and the need for rapid construction of the destroyed cities, the designers and architects created products and places under the influence of modernism where the optimum level of aesthetics, ergonomics, and function was met. Gio Ponti's 1954 sanitary ware set design is an iconic example of the era (Figure 21).



Figure 21. Gio Ponti's sanitary ware set design, 1954,
<https://www.sintesibagno.shop/en/blog/dettaglio-notizia?a=the-first-bathroom-designers-ponti-castiglioni-aulenti-historical-sanitaryware-and-toilet-seats>

In the 20th century, the form of bidet and toilet bowl became the subject of modern works of art. Artist Marcel Duchamp's (1887-1968) "Fountain", an important example of the movement of Dadaism, was a urinal upside down [15] (Figure 22). Duchamp's "Fountain" was voted the most inspiring work of the 20th century by 500 leading artists and historians in 2004. Another example is the Hundertwasser public toilet in Kawakawa in New Zealand, which was designed by Austrian-born painter and architect Friedensreich Hundertwasser, is a world-famous work of art and tourist attraction (Figure 23& 24).

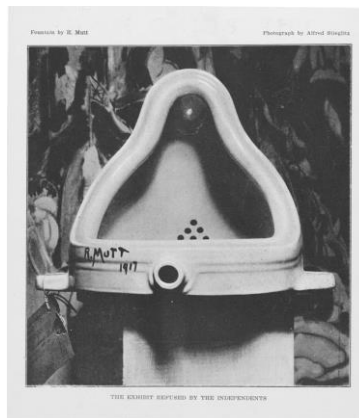


Figure 22. Marcel Duchamp's original Fountain photo, 1917, (p.50) [15]



Figure 23& 24. Hundertwasser public restrooms, 1999
<https://www.atlasobscura.com/places/hundertwasser-toilets>

In the 21st century, more compact solutions were also produced, thanks to technology to meet the need for toilets. Underground elevator toilet systems have urinal and toilet versions (Figure 25& 26). These compact venues, which can function without affecting the overall appearance, traffic and conditions of the city, environment and area, serve the continuity and speed that modern man needs.



Figure 25& 26. Compact toilet samples with Urillitis and Urilady elevators
<https://interestingengineering.com/culture/pop-up-toilet-urilift-rises-from-the-ground>

On the other side, in the 21st century, there are so many under-developed countries in the world that are struggling in terms of clean water supplies, and they don't have hygienic toilet systems and places. These deprivations, which lead to epidemics and mass mortality, may in the near future turn into famines and pandemics that can affect the world as a whole.

One of the biggest goals of Bill Gates's foundation is to develop toilets in these under-developed regions to provide a healthier environment. The foundation installed public toilets in Senegal, China, India, and South Africa, which operate on solar and have recycling capacities (Figure 27). The Gates Foundation argues that clean water and sanitary toilet conditions are the basic human rights of all communities. For the past 10 years, the foundation has been investing and supporting both ecological, economic and sustainable toilet systems under the "reinvent toilet" manifesto [16] (Figure 28).

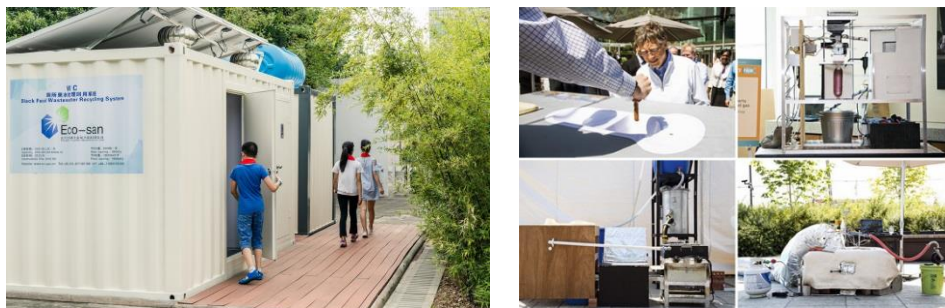


Figure 27. A public toilet installed by the Gates Foundation
<https://www.gatesfoundation.org/ideas/articles/sanitation-reinvent-toilet>
Figure 28. Toilet systems supported by Bill Gates and the Gates Foundation [16]

The need for the toilet, which was originally a daily need, had turned into a problem that needs to be solved with the start of urban life, and it still continues to be a problem in today's world. From ancient times to the present day, toilet systems, toilet culture, and restroom spaces evolved and developed under different social customs and religious beliefs in different societies. Although the West and the East civilizations had differences culturally throughout history, the main idea is the same in the design of the toilet (Figure 29). For the future, toilet systems, toilet spaces, and the global sanitation and hygiene conditions in which they are connected are a common concern for all societies and are directly related to the lack of natural resources and energy, such as clean water.



Figure 29. A Roman closet and an ultra-modern Japanese closet, the Venice Biennale, <https://www.historyhit.com/the-history-of-the-toilet/>

3. EVALUATION

User expectations are always related to culture, religion, and habits; and expectations conduct design or vice versa, design leads to advances in societies; so design raises expectations. While tracing 'the public toilet history', this article exemplifies both ways. In different periods of history, the degrees of user expectations are diverse in privacy, hygiene, comfort, and aesthetic cases. Although different cultures or civilizations had different signs of progress, the periods can be categorized roughly through the prominent evidence (Table 1).

Table 1. The historical evaluation of public toilets' user expectations in cases of privacy, hygiene, comfort and aesthetic

Eras & Expectations	Privacy	Hygiene	Comfort	Aesthetic
Roman Period	-	-	✓	✓✓
Medieval Period	-	-	✓	-
19th & 20th Century	✓	✓	✓✓	✓✓
21st Century	✓✓	✓✓	✓✓	✓✓

In the Roman period, there was no privacy, nor the users were expecting any. The main purpose was to socialize in synchronization with getting their job done. Also the Roman period's sense of hygiene was so far away from the modern sense. On the other hand, as socializer public places, the public toilets of Roman period were comfortable and highly decorated. Throughout the medieval period, the big cities of antiquity were fallen down, and so did the public toilets. There were few examples from the period; and were not providing any privacy, neither hygiene, nor aesthetics. In the 19th century with the rise of the industrial revolution and the big cities in relation, public toilets were in the picture again. The 19th and the 20th centuries witnessed significant inventions and discoveries. Public toilets became an indispensable part of fast city life. The demands of users were increasing, and the senses of privacy and hygiene were transforming.

If we compare with Roman period, the toilet units were separated by private cabins and personal hygiene was a priority. The public toilets were no longer socializing spaces anymore like in the Roman period, but more importantly, they provided another social progress. They were begun to build for both genders, so they ensured freedom of movement for modern women in the city. Especially through the 20th century, designers gave importance to not only comfort but also aesthetics. With the rise of the industrial revolution and serial manufacture, the design of sanitary products gained importance and they help to spread a global public toilet culture through the world. In this global culture, while privacy and hygiene mentalities were reshaping, the design frame was evolving as to comprise all users under the umbrella of universal design principles. In the 20th century, public toilets were begun to design specially for disabled people to provide comfort besides freedom of movement for them also.

In the 21st century, all four expectations have priorities and importance in different contexts. For example privacy is not only a user expectation it is also a legal requirement. Today, the case of hygiene is not limited to person or city borders; it became a global issue. Thanks to technology and maximum communication, users demand the uttermost comfort and aesthetics in public toilets.

4. CONCLUSION

Julie E. Horan wrote in her book *The Porcelain God* that, "Civilization began not with the advent of written language but with the first toilet." (p.3) [1]. Starting from the first examples in history, public toilets were more than just a 'necessity' place. In the Roman period, the *latrines* were highly decorated and they were places of socialization where politics was spoken, daily gossip was done, and even business deals were achieved. In the following eras, the development level of public toilets became one of the most direct indicators of the level of civilization of societies, cities, and therefore public spaces. In the medieval period, while western culture was going backward in terms of sanitation and living conditions, the Anatolian Seljuks were far ahead by building caravansaries that included sanitary facilities and public toilets.

The Industrial Revolution had great impacts on urbanization and rise of city life. The public toilets reemerged in fast city life to provide healthier environments and far-distanced circulation. In the 20th century, there are examples that the toilet and its space became an art piece. The contribution of the subject to culture has risen to a very high point. In the 21st century, half of the world's population is living in cities. Sanitation and hygiene is still an unsolved problem. We must think globally and produce and implement solutions locally. In a more connected world, technologically and physically, we are all responsible for better living conditions and a healthier environment.

Civilization history unfolds itself through the evolution of public toilets. We must learn from history. In the future, the civilization level will be also determined by how we handle the public toilet issue globally.

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