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A Current Overview of the Anatolian Bathroom Culture and Equipment in Terms of Design

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Abstract

Physical hygiene has been of importance since the existence of human being. Human being has tried to solve this problem as the problems of nourishment, housing, making life easy against nature, and making life meaningful. Human being has developed an important culture for thousands of years. Human being learning how to make a fire in the Stone Age (Neolithic age) started to worship smoke and water vapor. Human being believed in purifying with vapor or smoke. We see that people started to allocate space to bathing areas in their residences after they began permanent settlement.¹ Thanks to the obtained findings, we know that they produced solutions to wet spaces and established transportation systems for clean and waste water. We see the first examples of those in Ancient Egypt, Mesopotamia, and in Hittite in Anatolia. We see that spaces functioning as “bath rooms” or bathing places in gymnasiums in Ionia and Greece were converted into multipurpose social building societies in Rome; and they came to be “bathhouses” having social function and forming bathhouse cultures in Seljuk and Ottoman cultures. At the present time, general bathrooms (bathhouses) lost their importance and acquired new usage functions and approaches. They are one of the absolute must units of the spaces, particularly of residential spaces. They are special and elaborate spaces where the individual prepares himself for the day. Surface covering of bath spaces is ceramic. It is natural that equipments of special and elaborate spaces are also special and elaborate, which is the case at the present time. It has many dimensions from quality safety to aesthetical variety; and these phenomena are main problematic side of design of bath space, its materials and equipments.

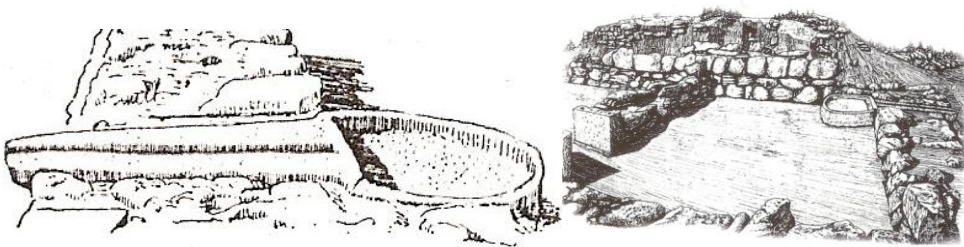
Keywords: Bathroom culture, tradition, design, bathroom tiles.

Introduction

Today, design phenomenon takes precedence over production and is a determining key element. It does not matter where a product is manufactured, but by whom it is designed. The main point in design is to create what is different and new, or to bring new different dimensions to a known product. There is a need for a set of data for the mental action to create depictions in the design action requiring creativity. Such data is also closely related to know development process of the product to be designed from the past and cultural heritage it has created. We can see this relationship when we look at the "bathroom culture", the subject matter of this Article, through today. We will try to present them in the following explanations. These explanations will demonstrate how user habits, social values (beliefs, understanding of everyday life, human relations, communication, etc.), changing tastes and ideas, technical difficulties or technological solutions are reflected in design. We understand that the water culture begins with human and water is used for cleaning purpose when we look at the history of mankind. (Abbasoğlu 2003). It is a fact that different bathing cultures have evolved in different regions of the world. Japan, Finnish, Indian bath cultures are those of significant cultures that we can so readily remember. We find concrete evidence in ancient cultures that water is used for cleaning. It is known that civilizations, such as Mesopotamia, Egypt, Anatolia, which forms the basis of today's modern civilization, have built washing places and washing cultures. The "bath" phenomenon in Anatolia where we live on and which has formed our vertical culture and in the Aegean civilizations of the first age civilizations, which are the continuation of Anatolia, created that unique, magnificent Roman bathing culture. The "bath" phenomenon in the Roman culture which covered the Mediterranean Sea as an inland sea and spanned through the surrounding regions turned bathing into a social institution with sports, games, entertainment and social events in addition to bathing only, spread widely and created an extremely beautiful architecture, decoration and visual plastic works (sculpture, relief, relief, mosaic, etc.). (Yegül 2006) Roman washing places were structured as spaces serving new social needs in the washing priority in the Islamic world in the Middle Ages. They have disappeared for some reasons in Europe where such places were built and developed in the same period. The Seljuk and the Ottomans have brought new dimensions to the "bath (hamam)" phenomenon of the Turkish culture that made its presence felt in Asia Minor and the Middle East in this period. This contemporary bathing culture has also provided contributions to the modern bathing culture in terms of individual and collective bathing. Today's bathing culture has reached the dimension of resting, preparing one itself to the day from the idea of bathing for "health and beauty" starting from the 19th century. Accordingly, "bathrooms" have taken their place in human life as an indispensable part of the new housing concept brought by urbanization.

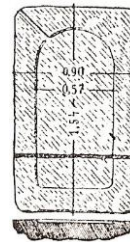
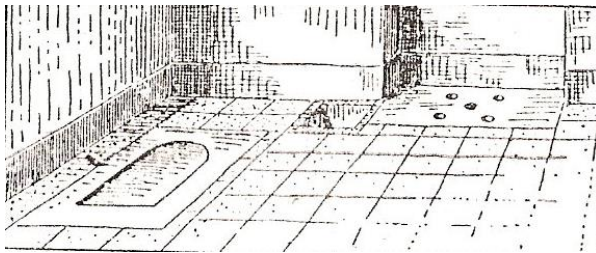
Bathing Culture In Anatolia In The First Age

Concrete findings related to the traces of bathroom culture in Anatolia are found in Hittites who lived in 2000 BC, despite its known history of above ten thousand years as suggested in the excavations made in Şanlıurfa/Göbeklitepe and Diyarbakır/Çayönü. Bathing and water cult in the Hittite culture is nested with Hititian beliefs. This inevitably was reflected in their daily lives and architecture. It is forbidden to attend religious ceremonies without bathing bodily in Hittites. Sacrificing ceremonies begin with bathing. There documents evidencing that kings and queens who rule religious rituals wash their hands. It is forbidden to eat votive foods without washing hands and not to wash hands after eating. As it is understood, bathing is a tool also for mental, spiritual purification besides physical cleaning. This is why they have bathroom spaces in their buildings and structures. Arguments that there are bathroom spaces inside building units of temples are suggested. For example, there is such a bathing room in Boğazköy. The base of the room was coated with waterproof mortar. Similarly, waterproof mortar with gravels was used in the bathing room in Tarsus Gözlükule Mound. A stone chute was made for discharging waste water and this stone was sloped accordingly to discharge water from the structure. This chute was connected to the waste water pit again with a chute stone and then, to the city's sewage system by ceramic pipes. Clean and waste water channels were built separately in the Hittite architecture. Small channels were made of earthenware pipes, while large stones were made of stones with overlay method. Large channels were made for the purpose of discharging rain and contaminated waste water. (Darga1985) Another settlement with a bathing room is Tilmen Mound. There is a bathing basin, made of basalt stone, in the room five of the palace structure of Tilman Mound, placed at the bottom of the eastern wall. The basin has a drain channel made for the waste water (Picture:1). The basalt drain stone sizes 3.50x1.70x0.45m. This monolithic basin (bathtub) weighs about seven tons. The channel curved onto the stone for discharging water used during bathing carries waste water across the wall and delivers to the waste sewage outside the building. (Duru 2003) There are five bathing rooms also in Aslantaş Mound



Picture :1. Drain pipe and bathroom space where drain pipe is installed (Tilmen Mound).

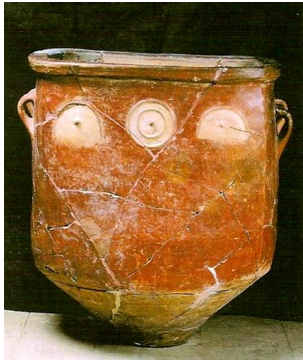
The room size about 5.50 m in width and 6.90 m in length. Picture: 2. illustrates the bathroom. There is a block bathtub stone with one side oval-shaped in which bronze tubes are placed. A similar stone block is found in the bathroom in Tel Halaf which can be seen in (Picture: 3). One of this type of bathing tubes was found in Zincirli. It sizes 62 cm in width and 115 cm in length and is cast-legged, flat-high with one side oval as it can be seen in the base stone in (Picture: 5.) Findings of the Hittite culture in the Northern Syria are richer. The bathing rooms here are larger. Base-embedded stone slices, basins, even a few, water containers, benches and special floorings for lavatory can be seen. Traces of bronze bath-tubes embedded in the waterproof base are found. There is a set of resting rooms in the bathing places and sofas and benches for resting in the rooms. Bathing tubes are seen as oval



Drawing :1. Palace bathroom in Aslantaş Mound. Aslantaş covering stone. (Tel Halaf)

Drawing :2. Floor

ceramic containers in the Hittite culture. These containers are the bathing means for ordinary houses outside the palace. Their lower parts were made conical to be buried in the ground. The upper parts are of rectangular prism-shape, while the base parts are conical. These containers are in such sizes that a man can fit in sitting, and these containers have a seat inside. There are handles on the both surfaces facing one another in the containers. These handles provides cleaning of the containers and discharging waste water inside. Picture 3 shows a ceramic bathtub found in İnandiktepe. Picture 4 shows another ceramic bathtub found in the Anatolian colonies of the Assyrian civilization, ruled in the South Anatolia and the Southern Mesopotamia in the 7th century BC. These bath-tubs are functionally similar to the Hititian ceramic bath-tubs, but they differ formally. Their mouth and body parts are oval-shaped. There are no seats inside these bathtubs. The likes of this type of bath-tubs were found in the Urartian palace bathrooms. As it can be understood from the above explanation, waste water from bathing is given to the city's sewage system. Waste water taken out of the building through ceramic pipes is directed to the sewage system and then carried outside the city walls through the sewage system. Drawing 1 shows the Hititian channel system.

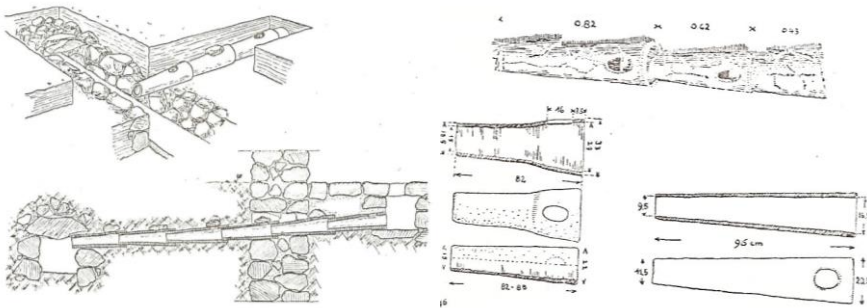


Picture: 3. Bath-tubs İnandıktepe. trading colonies



Picture: 4. Bath-tubs from Assyrian

Clean water was brought to the cities through another channel. Clean water pipes were made of ceramic in various sizes. These ceramic pipes measure 0.60 m to 0.96 m in length and 20 to 22, 11 to 15 cm in diameter (Drawing 3). Similar bathroom spaces and waste water conveyance channel system are also seen in the Urtu civilization, ruled in the 9th to 8th centuries BC. The Palace Bath in Van-Yoncatepe is the oldest known example to this. The bathroom sizes 6.80x11.50 m and in addition, has a cold pool measuring 1.70x2.03 m. The



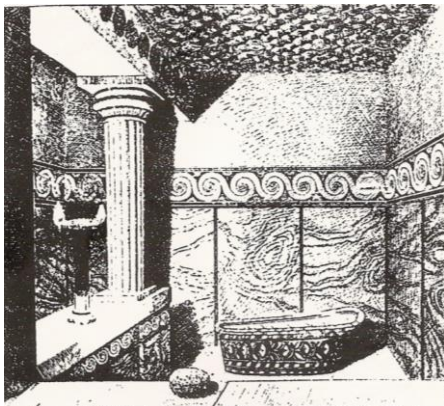
Drawing 3: Hititian waste water channel systems and forms, measures of channel pipes.

ceiling height is quite low compared to the overall structure of the palace, which measures 1.65 to 1.70 m. That the height of the bathroom ceiling is low is intended to achieve and maintain heat easily. The bathroom was heated by earthenware portable grills. There is a bathtub and base-embedded pool in the bathroom. The size of the pool is 2.30x3.60 m and the depth measures 40 to 50 cm. A bathtub was placed in the corner near to the cold bath of the bathroom. It was placed in a space opening to a terrace measuring 17 to 18 cm in height and sizing 1.10x1.75 m. Dimensions of the bathtub are 120 cm in length, 82 cm in width and 48 to 50 cm in depth. It is an earthenware bathtub, resembles the bathtub tubs in the period of the Assyrian

trading colonies and has discharge holes which is why washed in stagnant water. (Picture 4). There are also brazen bath-tubs in addition to the earthenware bath-tubs. There are two examples of the brazen bath-tubs in the Anatolian Civilizations Museum in Ankara. They formally resemble bathtubs seen in the Minoan civilization. Wet floors in the bathroom were tried to be made of compressed clay. (Belli 2003)

Bathing Culture In The Aegean Civilizations In The Ancient Period

Bathing culture, an important element in the Aegean civilization, is seen in the Minoan civilization in the island of Crete between 2000 and 1550 BC which coincides with the same period with the Hittites in Anatolia. There is also a bathroom in the famous Knossos Palace, in addition to many other sections. Picture 4 shows the bathing room in the Palace and the room's equipment. Picture:5. shows a ceramic bath-tub. It is earthenware, oval-shaped sunken from the both sides, has a wider mouth comparing to its lower part and handles on the both sides with its interior and exterior surfaces are ornamented. It dates back to 1400s BC. In addition to these deep bath-tubs, there are also those shallow bath-tubs with/without legs.



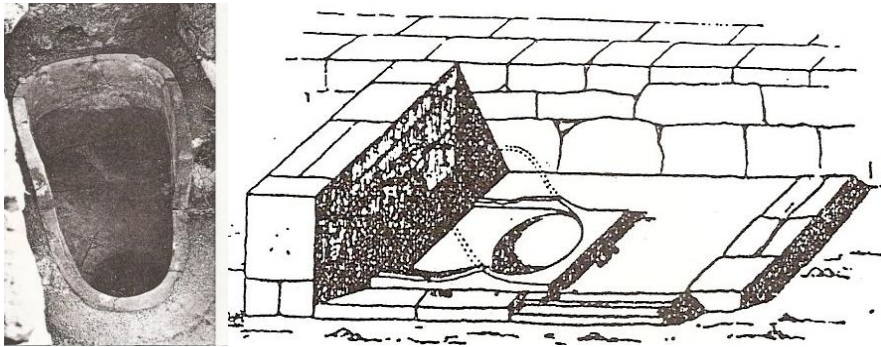
Drawing :4. Knossos palace bathroom in Minoan civilization Crete from 1400s



Picture: 5. Ceramic Bathtub in the

The Cretan civilization in that period also made waste water channels to discharge bathing and toilet water. No sufficient concrete information is available about the bath culture in other Aegean islands and the Greek peninsulas until the 7th century. It is seen that bathrooms in the new structure style started from the periods of the 7th century have been adopted as well. We begin to see bathroom spaces from the periods in which single room houses (megarons) have begun to develop into structures with a front section, courtyard and multiple rooms. Bathing scenes, bathing materials and bath spaces are observed in the surviving archaeological sites and on the visual materials. According to an opinion, bathtubs in the Greek and Ionian civilizations have developed with the turning of fountains in the public domain where children, young people and athletes were bathing into water basins with little depths. (Abbasoğlu

2003) Overtime, these water basins have turned into a system in which people have bath dousing and entered into the spaces. It is known that bathtubs have been used in Anatolia, Mesopotamia, Egypt, and Crete for many centuries. It is not possible to ignore that these bathing cultures, bathing supplies, spaces and equipment have had influence on the Ionian and Greek bathing cultures. Bathrooms were found in house structures in the city of Olympos situated in the Northern Greece. Floors and walls of the rooms were plastered with waterproof plaster against moisture. Bathtubs found here are similar to the bathtub found in



Picture :6 Ceramic bathtub, Delos Priene.

Drawing:5. Bathroom space assembly

Delos. (Yegül 1994) A ceramic bathtub different than the one we see in Knossos was found in the bathroom space, dated 7th century BC, in the island of Delos. It mentioned also in Homere's poems that these bathtubs are easy to use. Wood and marble materials were also used for the construction of the same bathtubs. Terracotta bathtubs were used wide-spread in that period. There were also metal bathtubs. There are different types of bathtubs in which a man could bath in a comfortable way. They are usually oval shaped, lower parts of some of them are flat. The part against which one leans its back when sit inside the tub to bathe is a little higher in some of them. The part against which one leans its back is a little higher and there are seats in some of them. There is a concavity in the part for feet. The side parts allocated for sitting were given a little more width so that a man could fit in. This part forms the above-ground section of the bathtub buried in the bathroom floor. This height and width must be intended to prevent flowing and splashing of water. The bathtub descends from the point where knees start when sit and remains below ground level. Drawing 2 shows how the bathtub is placed with two bathtub findings in Priene. This bathroom space measures 1.82 m x 1.62 m. (Cevizoğlu 2003) This type of bathroom spaces and equipment in Anatolia have been found in İzmir -Bayraklı (Smyrna), Tarsos, Larissa (Izmir Menemen- Burguncukkale).



Picture :7. A current view, Smyrna.

Picture: 8. Repaired bathroom. Smyrna.

Çekmece- İstanbul, Bergama, Klozomenai (Izmir-Urla). Of these, those in Tarsos and Symirna are interesting. The dimensions of the bathroom in Tarsos are 2.06 m x 2.85 m. The ceramic bathtub in the space measures 0.60 m x 0.90 m. Also, a small rectangular *water basin* was found in the Tarsos bathroom space. Bathing culture in the west coasts of Anatolia is richer in terms of bathroom spaces, bathing materials and infrastructures. Significant findings related to bathroom spaces and materials were found during the excavations carried out in Smyrna (Bayraklı-Izmir) which was one of the most important centres in that period. Picture 8 and 9 shows the bathroom space found. It approximately measures 155x170 cm. A ceramic bathtub that was almost intact with a bathing-seat inside was found in that room which was



Picture: 9. Repaired bathroom space. Smyrna.

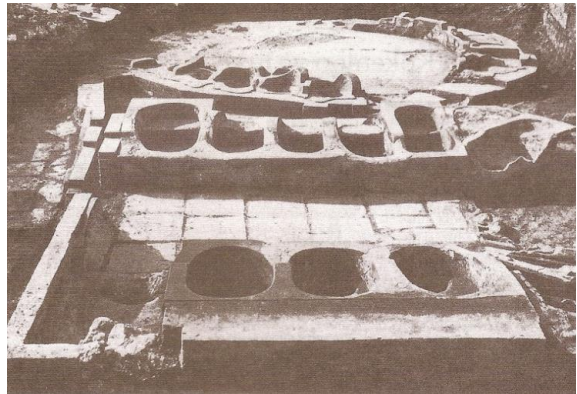
Picture: 10. Waste water assembly. Smyrna.

1.20 m in length. This bathroom space, dated back to the 7th century, was used in the 6th century. Floor of the space was made of clay, while the walls were made of stones. Niches on the walls may have been built to put lighting tools and bathing equipment. This *bathtub* was placed by being buried under the floor of the space accessed descending four steps. There is another similar bathtub dated back to the 6th century other than the above-mentioned bathtub. The bathtubs have holes to discharge waste

water in the hollow in the legroom of the bathtub which shows similarities with those in that period. These holes were generally connected to sewers as with almost all of the examples found in Anatolia which were connected to sewers. Picture 10 shows the sewer in Smyrna. Examination of samples of the relevant bathtubs reveals that running water has been used for the bathing action. The bathtubs do not have the form and function to allow entering in, filling water and bathing. One of the typical characteristics of these bathtubs in Anatolia and the Aegean civilizations of the ancient period is their ornaments on both lateral surfaces of the bathtubs. They are ornamented with relief or coloured soil. Picture 11 shows a piece of the bathtub found in Klozomenia. The piece ornamented with relief. Border of the bathtub found in Smyrna was ornamented with paint.

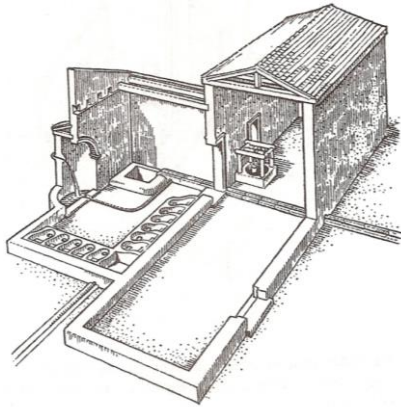


Picture: 11. Bathtub surface decoration. Gala-Sicily, 4th century BC. Klozomania

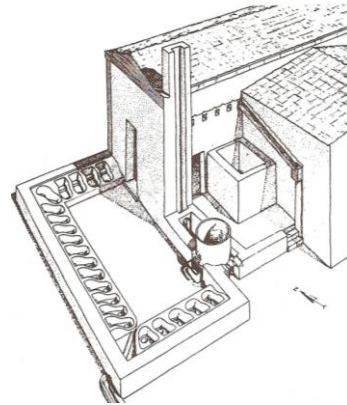


Picture: 12. Primitive bath,

Some of these terracotta bathtubs have borders. (Cevizoğlu 2003) These borders both provide protection for the bathtub against physical impacts and enable the person bathing to hold in terms of use. Bathroom spaces, seated bathtubs in the Aegean civilization have been used also in gymnasiums which were public areas outside houses. These areas primitive baths for public bathing with public bathtubs compared to today. They are also called *Greek baths*. Picture 12 shows the remains of a Greek bath built in Sicily in the 310s BC. Gymnasium baths are seen from the 7th century BC. These baths allow bathing with cold water and do not have a heating system in their first periods. Heating system and using hot water was began in the 4th century BC and afterwards It has been found out that underfloor heating system (hypocaust) was used particularly in the 2nd century BC and afterwards. A large number of seated bathtubs were placed in a closed space and located inside the same building complexes with gymnasiums in the first examples. Picture 5 shows a gymnasium bath built in Olympia in the 500s BC. No heating and hot water system is available in this bath. Water was provided through the water well inside the building which did not have seated bathtubs and waste water channels inside.

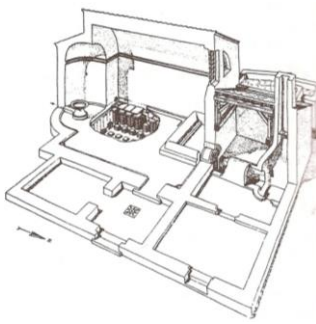


Drawing:6. Greek bath, 5th century BC. Olympia.
bath, 4th century BC. Olympia.

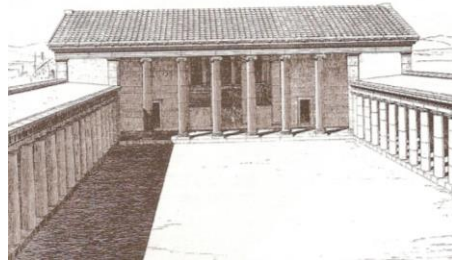


Drawing: 7. Greek bath, 4th century BC. Olympia.

Bathtubs in the bath placed adjacent to each other in the shape of letter "L" measure 0.60x1.20 m. The bath has an open air pool measuring 16x24 m. Heating of the space was made using metal or ceramic grills and producing vapour by pouring water over hot stones. Water was provided through the well and used cold. Wet floors were plastered with waterproof plasters. It is seen that stones have been used also in wet areas in the following periods. Marble-coated wet floors, which we see in the Roman and Turkish baths, have been used. However, these are not made in the form of plaque-covering technique. (Yegül 1994) The technique covering with marble plaques has been used in the Roman age. Picture 6 shows that a system for using hot water has been established. As shown in the Picture, seated bathtubs were arranged in the bathroom and the hot water boiler was placed to be heated outside and used in the bathroom section. The boiler is made of metal. Each of these bathtubs measure 0.55x1.07 m and there are twenty one bathtubs. Picture 7 shows a gymnasium bath again built in Olympia in the 100s BC. It is the fourth phase of this type of baths. An underground heating system (hypocaust) was established for the building besides the hot water system. There is an apse section in this bath. Apse is one of sections used in the Roman baths very often. The underground heating system was built by placing bricks in size of 25x25 m or 30x30 m on top of each other and a solid bath floor was obtained by building columns with the height of 0.80, 0.85 m and covering tile tables of 0.55x0.70 m over the columns. Heat was passed through the gaps between the columns and thus, the floor was heated. (Yegül 1994) The same method was used in the Roman Baths. The bathroom in the house of Consul Attalos, located in Bergama in the Hellenistic period is an example of underground heated residential baths. These baths used by athletes to bath in the Aegean civilization have been a pioneer of the well-known Roman Baths.



Drawing:8. Greek bath, 100th century. Olympia palestra, 2nd century BC



Drawing: 9. Miletus

That the Roman baths have become magnificent structures is also associated with the development of waste water and clean water systems. Picture 15 shows the hot pool section of the Roman bath, and Picture 16 shows the manhole grill collecting waste water of the sport area of the Roman bath and nested water channel carrying clean water. These are water channels made of terracotta pipes and carved stones. Water was carried to fountains, pools and water baths through these pipes. Baths in the Sicilian villas in the Roman period and baths in the terrace houses in Ephesus are significant samples. Baths in the Sicilian villas have a different structure in terms of heating. These baths have a wall-heating system. The heating system (stove) in the villa's kitchen was designed based on the principle of heating the adjoining bathroom at the same time. Wall-heating bathrooms which were common in the countryside in the central Italy had sweat rooms, bathing rooms and some of them even had dressing rooms. Another bathing tool besides the bathtubs in Anatolia and Aegean in the ancient periods is high standing wide and shallow bathtubs called *perirhanterion* or *louterion*. These bathtubs are known with two different names. They are named by the form of bathing action. If bathing is made sprinkling water symbolically for religious purposes, it is called *Perirhanterion*, and if it is made pouring water



Picture: 13. Roman bath life.



Picture: 14. Roman bath, Perge-Antalya.



**Picture: 15. Roman bath. Side-Antalya.
manhole and water channel. Side-Antalya.**



Picture: 16. Roman bath

in the literal sense outside for religious purposes, then it is called *louterion*. They are not different from each other formally, just their names change by their purposes of use. They can be found in temples, gymnasiums and bathroom spaces. They are similar to today's sinks in terms of function. They are made of marble or terracotta. They are a shallow tub resembling a sphere with an upper part cut. The feet section is adjacent to the tub or can be separated from each other. It is somewhat like a column with cylindrical body expanding towards the lower part. Their sizes differ; however, they generally measure about 70 to 80 cm in height and around 70 to 80 cm in diameter. However, there are *perirrhantierions* of 1.90 m to 2.00 m in diameter made of marble differently. (Cevizoğlu 2003) A similar sample has been found in Ephesus. Picture 17 shows the vase picture showing the bathing scene. Picture 18 provides general information about how cleaning was made in the bathtub and how was the cleaning action. It is clear that bathing was made by sprinkling water which indicates that it was used for religious purposes, and this is a *perirrhantierion*. Picture 18 shows the leg of a standing bathtub (*perirrhantierion*) found in Smyrna-Izmir in the 6th century. The leg was ornamented with embossed adornments as seen in the picture. They can be ornamented or plain as with in the seated bathtubs. The leg measuring 0.70 m in length is terracotta and was made using the embossment trailing technique in which a mythological subject was described. It is plain as with in the figurine found in Delos as it can be seen in Picture 19.



Picture:17. Bathtub



Picture:18. Bathtub (*perrirhanteria*) Smyrna.



Picture:19. Louterion figurine, 500 BC. Delos, Likya-Antalya



Picture:20. Louterion, Xanthos-Likya-Antalya

There are also other samples in Antalya Archaeological Museum which are renovated, ornamented and non-ornamented and ceramic. The leg and body in the sample made of terracotta material seen in Picture 20 separate parts. There are decorations on the edges and inside the tub. It is a very

shallow tub as shown in the picture. In addition to traditional decorative motifs used for ornaments of these bathtubs, narratives by which traditional, religious and social issues were processed as embossed pictures. Picture 18 shows such an embossed picture. The embossed ornaments in Picture 18 are mythological ornaments concerning belief. This is why it is considered to be a *perinhanterion*. There are findings indicating that ornamentation in these embossed ornaments has been made using the trailing technique in general. Picture 20 shows trailing ornaments on the edges. Greek vase pictures are enlightening also about the bathing

culture as with in many areas of the Greek culture. They took many areas of life as a subject matter and processed in these pictures, as well as the bath phenomenon. Our observations on these pictures suggested that bathtubs were an important tool. We also observe on the pictures that there were bathtubs made of stone, marble and bronze materials, besides those ceramic ones. Picture 19. shows a woman preparing for bath and carrying a tub. She holds a water pan in one hand and her clothes in the other hand. It is understood that the bathtub in the picture is metal. While bathing action was portrayed in Picture 20, we see a woman carrying bathing water in Picture 21. and a bathing scene and women carrying their clothes again in Picture 22. Picture 14 illustrates a religious bathing in a standing shallow bathtub (*perinhanterion*). Different bathing scenes were illustrated in this picture.



Picture :21. Vase image, 500 BC.



Picture: 22. Vase image, 500 BC.



Picture:23.Vase image, 500 BC.



Picture: 24. Vase image, 500 BC.

Conclusion

Current overview of bathroom spaces and equipment in the ancient periods has revealed that they have brought evolutions extending up to the present in bathing culture. The need for bathing and equipment appropriate to this need has attempted to bring spatial solutions. The common feature in almost every period is that bathing carries religious, intellectual and social dimensions together with the need for physical cleaning. Mostly, the religious dimension has been more effective. That

bathing became a necessity in religious, social context has led to the creation of bathing rules, customs and tradition. When we examine today's religious dimension of bathing action, we see that the phenomenon of bathing and religious purification exists today as well. Bathing action after sexual intercourse in which we observe in the Greek culture in the 7th century also exists today in many beliefs. (Abbasoğlu 2003) The rule not to pray without bathing (ablution) resembles the ritual of bathing before religious ceremonies in the first age civilizations, for example; the rule of not to attend religious ceremonies, not to eat sacrificial meat without bathing in the Hittites, the rule of washing head and body in religious holidays in the Mesopotamian civilization and the rule of bathing before religious ceremonies in the Greek civilization. Moreover, there is a rule of washing religious statues (idols) before religious ceremonies which was carried out by priests during religious holidays. "*Bathing cubicles*" in the Ottoman culture were built for this purpose. They even built portable baths and bathing cubicles in the army system. There are very ergonomic *bath* and *bathing cubicle* tents right next to dining hall, dormitory tents. Picture ... shows an Ottoman army bath. Bathtubs, pools, standing bathtubs inside the structural integrity of the Greek temples serve this purpose. They are also referred to in Homer's epics. The ritual of bathing the deceased in the ancient Greek civilization is for religious purposes. Associating bathing with health and adding a health dimension to bathing in the Western Anatolia and the Greek bathing cultures besides physical and spiritual purification has led to building baths for athletes and caused the public bathing culture. This is the feature that is still used today, particularly in the Turkish baths. The need for purification related to spiritual and physical health has had influence on the formation and creation of bathing equipment and spaces also in formal context. We observe that bathroom spaces in buildings in the Hittites and the Minoan civilization in Crete of the Aegean islands of the Bronze Age civilizations and in the Anatolian coasts, the Aegean islands and in Greece from the 7th century onwards are same as with in today's houses. They were taken their places in houses, sports fields and temples. Bathing was accepted, respected pursuant to cleaning and beliefs and spaces related thereto were designed in these civilizations, which formed the basis of the contemporary civilization (the Western civilization). Civilizations in the European geography have fallen out of step with the traditional bathing culture after the Roman civilization until the end of the 19th century and the beginning of the 20th century due to religious conservatism. A period that has lasted hundreds of years without toilet, bathroom, sewer system, and this period has dealt with health problems, epidemics.



Picture: 25. Roman bathing space. Ephesus-Izmir. current bathroom. Catalogue.



Picture: 26. A

Fairly large areas were allocated for bathroom spaces in the Hittite palaces and temples and in the Urartian palaces measuring 5.50 X 6.90 m and 6.80X11.50 m, respectively. Bathroom spaces of that size in houses of course were not available. Bathroom spaces in such houses were the spaces where ceramic bathtubs of sizes in which a man could fit by sitting were placed. The bathroom spaces that we see in the ancient period after the 7th century are of sizes in which bathing equipment can fit. For example, these bathroom spaces are of sizes 182 x 162 cm in Priene, 155 x 170 cm in Smyrna and 206 x 286 cm in Tarsos. The dimensions of these bathroom spaces are close to the dimensions of bathroom spaces in today's residential houses. The Roman civilization founded after Hellenism and on the political geography of its cultural heritage has benefited from these bath cultures. The same places were used in the Roman period, for example, the house and bathroom space of Consul Attalo was used also in the Hellenistic period and turned into a bath by equipping with a heating system in the Roman period. Other samples have been observed also in Priene and other centres. The bath found in a Roman villa Aliğa (Antioch) - Izmir measures 3.30 m x 4.30 m. There are many ruins of baths of about these sizes in the terrace houses in Ephesus and they provide more robust information about bathroom spaces. Picture 23 shows the ruins of a bath in one of the terrace houses in Ephesus. Waterproof plasters and marble masses were used for moisture problems in the bathroom spaces in these periods. The bathroom space in Crete Minoen was built of stones completely, while waterproof plaster gained importance in the Hittites. Waterproof plaster was used in the bathroom spaces in Greece, the Islands and the Aegean coasts from the 7th century to the 1st century BC. Marble was used in bath structures for sports purposes.



Picture: 27. Water (clean or dirty) plumbing in Roma. Picture: 28. Bathroom space hot room. Ephesus, Izmir.

We understand that a solution has been sought for moisture problem when we examine these structures. They produced not only waterproof plaster, but also solutions for issues such as bathroom usage equipment and discharge of waste water. The Hittites carried waste water to waste pit through drain pipes and then to main channel through ceramic pipe channels and kept waste water away from their immediate surroundings. The waste water problem in Greece and Anatolia in the ancient periods was solved with the help of channels between the 7th century and 1st century BC, but drain pipe stones and storage reservoirs used by the Hittites were not used and waste water was directly connected to channels through ceramic pipes. This method was continued also in the Roman civilization. Picture 27 shows a water pipe laying with ceramic pipes. No sewage system was used in cities in the European countries after the end of the Roman period to the mid of the 19th century. That cities in the European countries grew with the social pushing of the industrial revolution and problems resulting from waste water became insurmountable has made the use of sewage systems necessary. Despite this situation in Europe, the bathing culture in Anatolia has developed continuously and has lasted for thousands of years, has developed the *Turkish Baths* which also exist today and has led to beautiful architectural structures that are still being used. Sewerage system has not existed all the time. Waste water is carried through channels also in our day. Wet spaces were provided with marble plaque coverings instead of marble blocks from the Roman civilization. We see these examples again in the terrace houses in Ephesus. Picture 28 shows marble coverings on the floor and side walls in the bath ruin. Given that bricks, stones and soil mortar as binding agent were used for the walls, it must be admitted that they implemented marble to wet and hot areas successfully. We also observe mosaics in wet areas, particularly in baths in Rome. In addition to the innovation of covering marble to wet areas, they developed the technique and culture of *heating the space* which has extended up to the present and created the concept of *bath*. Picture 28 shows the furnace (floor heating) section of a house bath with its base collapsed. The bathroom base was placed on the columns formed by baked cylindrical tablets. Picture 25 shows how the base was placed, what kind of material was used, how

marble covering was implemented on the floor and walls. Hot air heated the floor and space of the bath by circulating around these columns. Roman baths were mainly floor-heated, but they also implemented the wall heating system. Wall heating was achieved by passing hot air through terracotta brick pipes. These bricks were square or round. They were interlocking bricks like terracotta water pipes and connected to chimney. It is known that the wall heating system has been used in Turkish baths by passing hot water



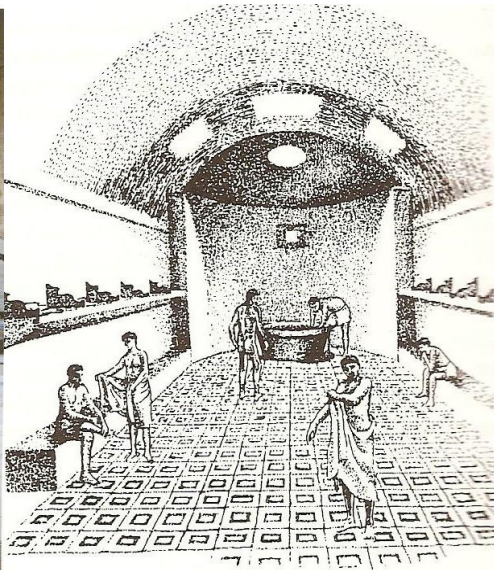
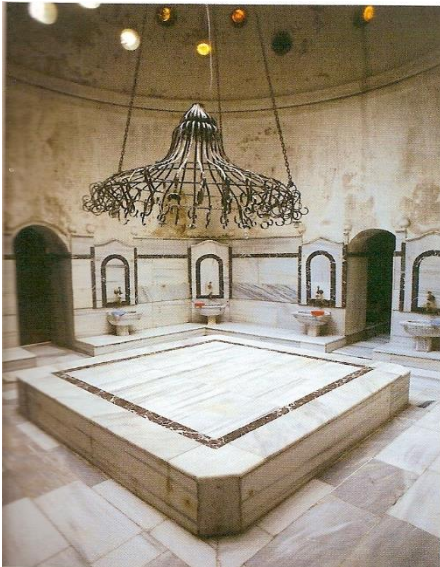
**Picture :29. Kubar Abat bath and tiles.
Turkish bath image-1870**



Picture: 30. Jean-Leon Gerome

through pipes. Today's heating systems offer diversity with the opportunities provided brought by technology. Hot water and a hot environment is achieved in baths with the help of stoves in the simplest term. Floor heating, radiator heating and so on systems are used. The discovery of heating system has turned bathrooms into places used not only for bathing and cleaning, but also for pleasure, entertainment and rest. The adding of heat and marble covering to the Hellenistic bathing spaces has led to the creation of the famous *Roman baths*. Roman baths are holistic structural units suitable for public and bathing functions. Wet places in Turkish baths reaching today were mostly coated with marble as with in Roman baths. Their floors and side walls are the sections that could directly absorb moisture. Picture 28 shows these sections. The heating system in these baths is the same. Heating is achieved by circulating hot water underground. There is also the practice of covering wet areas with ceramic (tile) implemented in Turkish baths, but it is not common. Ceramic coverings were implemented for interior side surfaces in palace and public baths in the Seljuk era. Hunat bath in Kayseri that is still in use is a sample to that. We understand from the ruin findings that tile covering has been used in the interior of the bath in Kubar Abad Palace. Picture 29 shows the ruins and details of the findings of tiles implemented. Tiles were implemented in the Ottoman baths from time to time. Tiles implemented in the Turkish baths can be observed in miniature paintings and paintings of foreign artists. (Picture 30). Many tiled baths in Bursa and Istanbul have reached today. That tiles used in the Seljuk and Ottoman baths could not reach today, in other words, could not be used in baths widely must be due to water absorption properties of tiles. The reason for this is that tiles absorb moisture in wet areas and as a result, they fall from surfaces due to physical factors resulting from swelling of the body and differing expansion. This fall occurs both in glazes on tile surfaces and

interior walls on which they are coated. Today, floor and wall coverings are used for wet floors. The reason for the use of floor and wall coverings today is that science and technology has reached data necessary for the use of these materials. The main key properties of floor and wall coverings are that their



**Picture :30. Interior of Roman bath, hot room.
Çukurcuma bath Istanbul..**

Picture: 31. Turkish bath,

water absorption percentages are low, they are solid, resistant to acids, chemicals, pressure and sudden hot and cold shocks. Ceramic coverings in the Seljuk and Ottoman periods were used also for decoration purposes besides being a solution to wet places which in a sense is consistent with the use of contemporary surface coverings. Bathroom spaces that we see that they have existed since ancient times could never have the opportunity of decoration as in today. Today's floor and wall coverings are rich also in terms of ornaments besides their technical competence. Colour, texture, motif and so on ornaments can be implemented on covering elements. Such practices create fashion and become one of the factors determining the competition between manufacturers in that sector. Baths in the Turkish culture have always existed in a section of houses of rich families as in Romans, except for public baths. Apart from this, Turks have developed *bathing cubicles and lower stone base spaces* for ghusl (full ablution) purpose. These were implemented a kind of base stone, called *çağ taşı*, for protection against wetness and their side walls were covered with waterproof plaster.

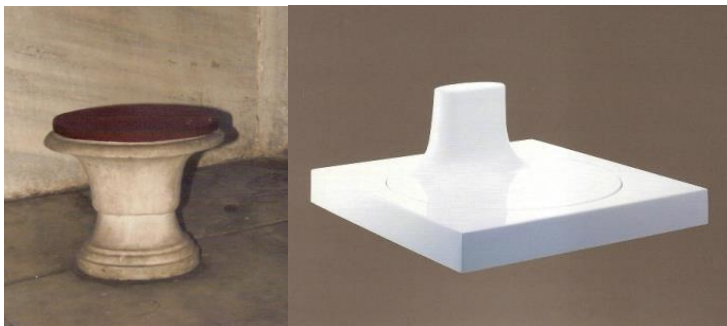


Picture :32. Bathing cubicle in Çakırağa Mansion and a *lower stone base* in Kayseri.



Picture: 33. Bathtub (marble, Ephesus, Izmir), one of bathtubs used today.

If there is no such a base stone in the building, then, of course, waterproof plaster is used. *Bathing cubicle* is a place with an area enough for a person can bath. They were usually built inside rooms. A section of *lower stone base spaces* is open. The section up to shoulders when sat is covered. Today, bathing action is limited with spaces allocated in residential houses due to new housing and new requirements, obligations.



Picture: 34. A bathing seat in Harem section in Topkapı palace, and a current seated bathtub design.



Picture: 35. Louterion (marble-Perge-Antalya) and a ceramic sink used today.

We demonstrate that bathing in the Hittites in 1800s BC was taken mostly by sitting in a running water. Areas with floors plastered with waterproof plaster, bathing area with stone basis and mostly terracotta bathtubs were used as bathing tools. However, bronze bathtubs were also found. We see ceramic bathtubs in the Minoan civilization in Crete in the same period. Ceramic bathtubs used between the 7th century and 1st century BC are not the type of bathtubs in which water was poured and bathing was taken sitting in standing water. They are of such a design in which bathing was taken with running water sitting inside and minimized water flows during bathing. This type of bathtubs are available also today. Today's bathtubs allow for bathing with standing water as well as running water by sitting inside. In addition, the function of these bathtubs are not limited only to bathing action today, but they also offer functions such as resting, pressurized water, soapy water, massage. Picture 34 shows a marble bathtub from the Roman period and a polyurethane bathtub in the present time. This marble bathtub measures 163x65 cm with a depth of 35 cm. Due to the necessity to compete with different formats, polyurethane bathtubs are produced in different colours and forms since it is easy to form the polyurethane material. *Louterions*, *prienterions* which we could consider as sinks today were used in Rome for the same purpose, while basins, ewers and several fountains were used in the Turkish culture. These cleaning tools were primarily used for cleaning purpose and for religious purposes in the second place in the Turkish culture. Today, sinks are indispensable elements applied to walls of contemporary bath or toilet spaces or applied desktop. Picture 35 shows a Roman-era marble *louterion* and a sink which serve the same function today. In addition their formal similarities, they are also similar in physical strength. The marble *louterion* is resistant to harsh and instant hot-cold changes. The sink both has the same features with *louterion* and features that *louterion* does not have. These are the features such as resistance to abrasion, acids and chemicals and being bacteria-free. The features that we have mentioned as different are those features added to contemporary sinks by science and technology. The ancient period bathing culture has been examined in terms of spaces, tools used and solutions produced for them. We have endeavoured not to stray away from the

essence of the matter in comparisons with today. For example, information about the Roman or Turkish baths have not been given much in detail.

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