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## Bathing in a ›Western Style‹. Private Bath Complexes in Roman and Late Antique Asia Minor

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INGE UYTTERHOEVEN

## Bathing in a ›Western Style‹. Private Bath Complexes in Roman and Late Antique Asia Minor

*Schlüsselwörter:* Wohnen, Baden, Kleinasien, Architektur, Romanisierung

*Keywords:* Housing, Bathing, Asia Minor, Architecture, Romanization

*Anahitar sözcükler:* Yaşama, Yıkama, Küçük Asya, Mimari, Romanizasyon

### INTRODUCTION

When Publius Papinius Statius visited Pollius Felix in the Bay of Naples in the late 1<sup>st</sup> century A. D., he was immediately impressed by the private baths of his friend's luxurious villa: *Gratia prima loci, gemina testudine fumant balnea* (›The spot's first grace is a steaming bathhouse with twin cupolas« – *Silv.* 2.2.17–18<sup>1</sup>). Numerous other ancient Roman authors, including Petronius (ca. 27–66 A. D. – *Sat.* 73), Pliny (61–ca. 112 A. D. – *Ep.* 2. 17. 11; 5.6.25–26) and Sidonius Apollinaris (ca. 431–489 A. D. – *Ep.* 2.2.4–9), were similarly pleased by bathrooms in private houses<sup>2</sup>.

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*Sources of illustrations:* *fig. 1* = Google Maps. – *fig. 2* = courtesy Österreichische Akademie der Wissenschaften. – *fig. 3* = Wiegand 1904, 292. – *fig. 4* = after: Bachmann 2004, 225 *fig. 12* (Phase 3). – *fig. 5a–c* = Zimmermann – Ladstätter 2010, 56 *fig. 72*. – *fig. 6a–b* = after: Wulf 1999, 91 *fig. 50*; 97 *fig. 52*. – *fig. 7a–b* = after masterplan Urban Mansion – Sagalassos, ©Sagalassos Archaeological Research Project. – *fig. 8a–b* = after: Rathmayr 2009, 313 *fig. 2*. – *fig. 9* = after: E. Rathmayr – I. Adenstedt, masterplan Wohneinheit 7. I thank E. Rathmayr for sharing this plan with me. – *fig. 10* = after: Dörpfeld 1907, pl. 14. – *fig. 11* = after: Keil 1932, kol. 14 *fig. 6*. – *fig. 12* = after: Pinkwart – Stammnitz 1984, pl. 52. – *fig. 13* = after: Şimşek 2009, 433 *fig. 10*. – *fig. 14* = after: Karlsson 2010, 368 *fig. 9*. – *fig. 15a–b* = after: Antandros 2011 and Polat *et al.* 2009, 54 plan 1. – *fig. 16* = after: Campbell 1996, 196 *fig. 14*. – *fig. 17* = after: Berenfeld 2009, 212 *fig. 6*. – *fig. 18* = after: Manière-Lévêque 2007, 434 *fig. 1*. – *fig. 19* = after: Ephesos 2011b.

<sup>1</sup> Translation by Shackleton Bailey 2003.

<sup>2</sup> For further references to literary attestations of baths in Roman elite houses: cf. Papi 1999, esp. 695–700; Hewitt 2000, 16–41.

In addition to these writers, non-literary written documents<sup>3</sup> and iconographical sources<sup>4</sup> likewise evidence that several Roman and late antique houses were equipped with their own private baths.

As attested by the written and material sources bathing was indeed an aspect typical of the Roman lifestyle. Once the Roman public bath complex, typified by hypocaust systems and a fixed sequence of bathrooms with clearly defined functions for common bathing<sup>5</sup>, had been developed in the 2<sup>nd</sup> century B. C., public bath buildings became characteristic elements in the Roman city landscape. Besides, and even already before the development of the public bath, bathing took a prominent place in the private sphere<sup>6</sup>.

In spite of the role private baths played in Roman society, bathing has mainly been studied as a public phenomenon thus far, whereas research on private baths has been rather restricted. This is, for instance, clear in overviews focussing on the evolution of Roman baths<sup>7</sup>. The limited studies on bathing in a private context that have been carried out are, moreover, confined to selected areas of the Roman Empire<sup>8</sup>. In the West, Roman and late antique private bath suites are relatively well-known, particularly in Italy, thanks to studies dedicated to Campania (above all Pompeii and Herculaneum) and Rome. Besides, the private bathing installations of Gaul, Spain and Northern Africa have also been investigated<sup>9</sup>. On the other hand, for the Eastern Mediterranean basic studies dealing with private bathing are still largely missing, with exception of some valuable contributions on Greece and Palestine<sup>10</sup>.

As far as Asia Minor is concerned, specialised case studies of private baths have been published for Ephesos, Pergamon and Sagalassos<sup>11</sup>, but other private bath spaces in the area are only

<sup>3</sup> For instance, the *Notitia Dignitatum* gives an interesting overview of the palaces, *domus* and private baths that existed in the fourteen regions of Constantinople in the Theodosian Period. 153 of the 4388 listed *domus* had private baths. Cf. also Baldini Lippolis 1994, 303; Dark 2004a.

<sup>4</sup> A nice iconographical example is the 4<sup>th</sup> century mosaic in the vestibule leading to the elaborate baths of the Villa Casale at Piazza Armerina (Sicily). It presumably shows the lady of the house flanked by her two sons and two servants on their way to the baths. Cf. also Barbier 1962, 24, fig. 15; Dunbabin 2003, 459–460, fig. 22. For further representations of the bathing ritual: cf. Hewitt 2000, 228–230. 257–258.

<sup>5</sup> For a definition of the typical ›Roman‹ public bath in Italy: cf. Fagan 2001, 403–404: »Two features define the Roman bath: first it comprises gradations of heat in a clear sequence of rooms (usually termed in modern studies *frigidarium*, *tepidarium*, *caldarium*) that channels the bather purposefully from one room to the next; second, the Roman-style bath features heated communal bathing pools (termed *solia* or *alvei*).« See also Yegül 1992, 29 and 2010, 81 on Roman heating systems: »This systematic use and control of heat in different spaces constitutes the fundamental difference of Roman from Greek bath technology and design.«

<sup>6</sup> For the origins and development of Roman baths and bathing: cf. Nielsen 1990, 6–36; Yegül 1992, 48–91 and 2010, 40–79.

<sup>7</sup> Nielsen 1990, 5 is aware of the omission of private baths in her publication. Private baths are shortly included in her overviews of the origin and early development of baths. Yegül 1992, 50–55 and 2010, 45–47 discusses private baths in an equally limited way.

<sup>8</sup> For further bibliographical references to late antique private baths: cf. also Uytterhoeven 2007b, 54–56.

<sup>9</sup> Italy: cf. e. g. Lafon 1991. Campania: cf. de Haan 1996, 59–65; 1997; 2003; 2007 and esp. 2010; Dickmann 1999b, 256–267. Rome: cf. Papi 1999. Gaul: cf. Bouet 2003. Spain: cf. García Entero 2006. North Africa: cf. Hewitt 2000. Tunisia in particular: cf. Ghiotto 2003, 221–232; Ghedini 2005, 207.

<sup>10</sup> Greece: cf. Bonini 2006, 144–153. Palestine: cf. Hoss 2005.

<sup>11</sup> Ephesos: cf. Wiplinger 1997, 1999 and 2000a; Ladstätter 2002; Rathmayr 2010a and 2010b. Pergamon: cf. Wulf 1999. Sagalassos: cf. Uytterhoeven – Martens 2008.

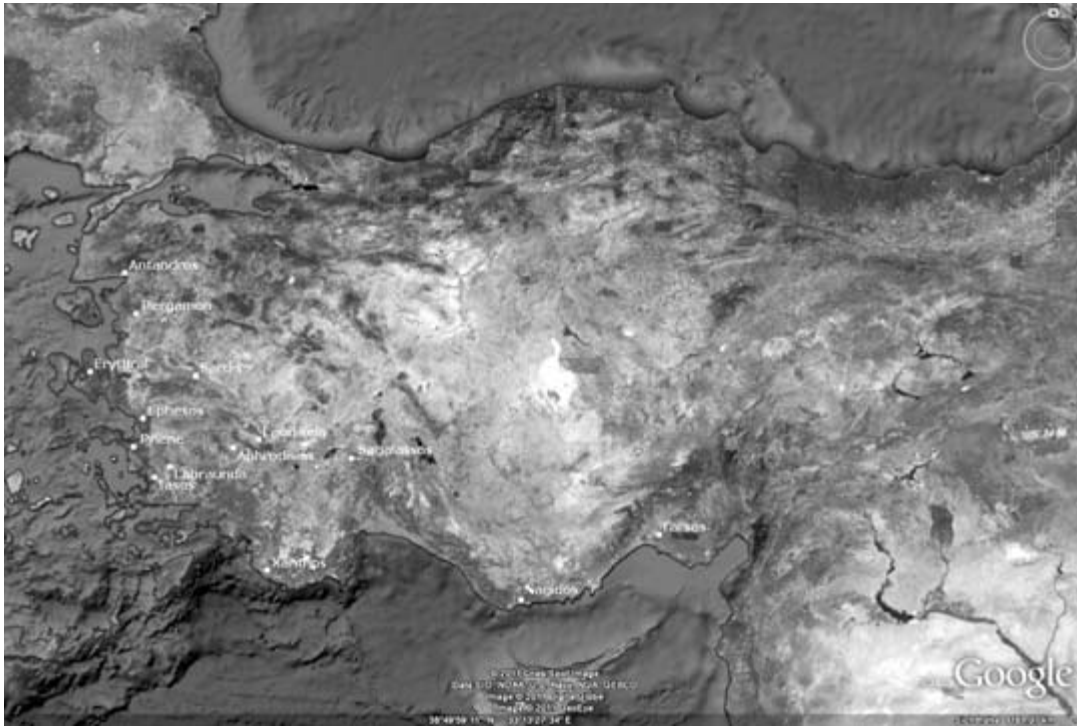


Fig. 1 Map of Turkey with indication of the sites under discussion

shortly mentioned in excavation reports. Consequently, detailed data on the plans of the baths, their dimensions, technical features and location within the dwellings remain largely unknown.

By focusing on baths in private house contexts of Roman and late antique Asia Minor this article intends to form a contribution to the study of private bathing in the East and to help remedying the current backlog for this area. After a discussion of some issues related to the study of private baths, the currently available archaeological evidence for private bathrooms in the Roman and late antique houses of Asia Minor is presented (*fig. 1*). The next section addresses some general research questions regarding the typology of the baths, their water and heating infrastructure, decoration schemes, and interrelation with other spaces within the dwellings based on the available evidence. Finally, the identity issue of the house owners who could afford a private bath complex and chose for a bath in the ›Italian-style‹ will be discussed<sup>12</sup>.

<sup>12</sup> Preliminary results of this study were presented at the *SPA Sanitas per Aquam* Conference in Aachen (*Internationales Frontinus Symposium zur Technik- und Kulturgeschichte der antiken Thermen* – 2009); cf. Uytterhoeven in press.

THE STUDY OF PRIVATE BATHING IN ROMAN AND LATE ANTIQUE ASIA MINOR:  
RESEARCH ISSUES

The investigation of private baths in Roman and late antique Asia Minor is hampered by various issues, which are largely connected with the study of private housing in the area in general. First of all, only a small number of Roman and late antique houses have been excavated *and* published in an accessible way<sup>13</sup>. Consequently, detailed studies, such as those on some well-explored houses at Ephesos and Pergamon<sup>14</sup>, are exceptional. Luckily, these data are continuously being supplemented by new excavations of private dwellings (e. g. Sagalassos, Hierapolis, Antandros and Arykanda)<sup>15</sup>, as well as by resumed research on previously partially excavated houses (e. g. Ephesos and Halikarnassos)<sup>16</sup>. Given the small number of houses that have been excavated per individual town, general observations about the arrangement of residential quarters during a certain time period, as well as about the distribution of dwellings with private baths within the urban framework are at present not (yet) possible.

Secondly, few of the investigated houses have completely been excavated, either because their research is still ongoing (e. g. Antandros and Sagalassos) or because their investigation was left unfinished. Besides, houses have sometimes even partially been dismantled in order to reach older, ›more interesting‹ structures<sup>17</sup>. All this has resulted in incomplete ground plans and prevents us from getting an idea of the total dimensions of the dwellings, their exact layout and the function and interrelationship of the individual spaces. These limitations logically also hinder the identification of private bath complexes, which are sometimes in a very fragmentary condition or have in some cases not (yet) been revealed. Besides, the understanding of the arrangement of the baths, their functioning and decoration, as well as of their position within the broader house context is problematic.

Thirdly, as in other areas of the Empire, especially upper class houses are visible in the archaeological record of Asia Minor. Consequently, much less is known about the private dwellings of the middle and lower classes, which were often smaller and built in more perishable materials<sup>18</sup>. Since the focus of archaeological research in Asia Minor has, moreover, for many decennia been on the urban texture, urban houses are much better known than rural dwellings<sup>19</sup>. This ›over-representation‹ of urban elite houses in the current housing evidence logically also influences our picture of the private baths.

<sup>13</sup> See also the general remarks on the present state of the housing research in the East in Gros 2001, 229.

<sup>14</sup> Ephesos: cf. e. g. Lang-Auinger 1996 and 2003; Krinzinger 2002 and 2010; Boulasikis 2003 and 2010; Thür 2005a. Pergamon: cf. e. g. Pinkwart – Stammnitz 1984; Wulf 1999; Bachmann 2004 and 2010; Wirsching 2010.

<sup>15</sup> Sagalassos: cf. e. g. Waelkens *et al.* 2007; Uytterhoeven *et al.* 2010. Hierapolis: cf. e. g. Zaccaria Ruggiu 2007. Antandros: cf. e. g. Antandros 2011. Arykanda: cf. e. g. Gürgezoğlu 2005.

<sup>16</sup> Ephesos: cf. e. g. Ladstätter – Pülz 2007, 405–407. Halikarnassos: cf. Isager 1995 and 1997; Poulsen 1995.

<sup>17</sup> This happened at Xanthos where the entire southern wing was destroyed by earlier archaeologists in their search of ›Lycian‹ levels. Cf. Manière-Lévêque 2007a, 426 and 2007b, 477 n. 8, where she indicates that: »About 1650 m<sup>2</sup> floor space of the south wing was destroyed in 1956.«

<sup>18</sup> For this issue related to late antique housing: cf. Sodini 1993, 150 and 2003; Ellis 2006; Zanini 2006.

<sup>19</sup> Cf. also Uytterhoeven 2007a, 82–85. For private baths in villas in the East: cf. Rossiter 1989, 110.

A fourth issue concerns the dating of houses and their private baths. Because several ancient dwellings knew a long occupation history<sup>20</sup>, building interventions, including the change of use of individual spaces, often prevent us from getting a clear understanding of the developments a dwelling and its bath underwent through the centuries. Consequently, the dating of the construction, use and abandonment of private baths often remains precarious. Furthermore, since the few absolutely datable private bathrooms do not all belong to the same time period, comparisons and generalizations should be made with caution.

Finally, apart from the above-mentioned general housing issues, another problem is related to bathrooms in particular, and concerns the identification of spaces as bathrooms. Although the ›standard‹ combination of some typical architectural elements, such as hypocaust installations, fixed basins and water systems, may clearly refer to a bathing function, the isolated presence of these features does not always lead to an unequivocal identification. For instance, hypocaust systems not only occurred in bath contexts, but were also applied in dining and reception spaces (often ›winter *triclinia*‹)<sup>21</sup>. Concerning Asia Minor a nice example is Room SR 26 in ›Wohnheit 5‹ in ›Hanghaus 2‹ at Ephesos (fig. 2)<sup>22</sup>. This large rectangular room, located north of the peristyle courtyard, was provided with a hypocaust floor that was in the west connected with a *praefurnium*<sup>23</sup>. Although on the first sight an identification of Room SR 26 as a bathroom might be probable, several elements suggest that it rather functioned as a representative space for reception and dining, which could be heated in cold periods. The lack of wall *tubuli*, a bathtub or a half-circular niche for the *labrum* has been brought up by the Ephesos excavation team as an argument against the identification as bathing space. Similarly, the fact that, apart from a small floor outlet in the south-east corner of the room, no other water supply and sewer systems have been preserved makes a bathroom function rather unlikely. In addition, no water pipes have been retraced in relation to the marble-clad cascade *nymphaeum* in the southern wall of the space, suggesting that it had a decorative, rather than a real water supplying function. Finally, bronze furniture elements (e. g. three foot of a foldable table and a foldable chair in bronze), found in relation to the last, 3<sup>rd</sup> century A. D. occupation phase, fit within the context of a reception and/or dining room<sup>24</sup>.

Sometimes the identification of a bath cannot be based on the architectural characteristics of a space, but on loose small finds, such as terracotta wall spacer pins and individual hypocaust tiles.

<sup>20</sup> See also Ellis 1997, 39 for the long building history of late antique houses.

<sup>21</sup> Cf. also Yegül 1992, 467 n. 58.

<sup>22</sup> The Ephesian ›Hanghaus 2‹ consisted of seven housing units, which were – in a luxurious way – occupied from the first half of the 1<sup>st</sup> century A. D. (Augustan-Tiberian Period) until the third quarter of the 3<sup>rd</sup> century A. D. Afterwards they remained still – partly – inhabited, though without being substantially built up again. For the building phases of ›Hanghaus 2‹: cf. Ladstätter *et al.* 2005, 252 n. 10; Zimmermann – Ladstätter 2010, 46–49, 77–80. For general remarks on spaces with hypocaust floor but without bathing infrastructure in this terrace house: cf. Zimmermann – Ladstätter 2010, 52–53.

<sup>23</sup> Cf. Adenstedt 2005, 34.

<sup>24</sup> Cf. Thür 2005a, 5 n. 39 and 2007; Rathmayr 2007; Reuckl 2007. For the *nymphaeum*: cf. also Adenstedt 2005, 36.





Fig. 2 Ephesus – Hanghaus 2 – Private baths and spaces with hypocaust systems

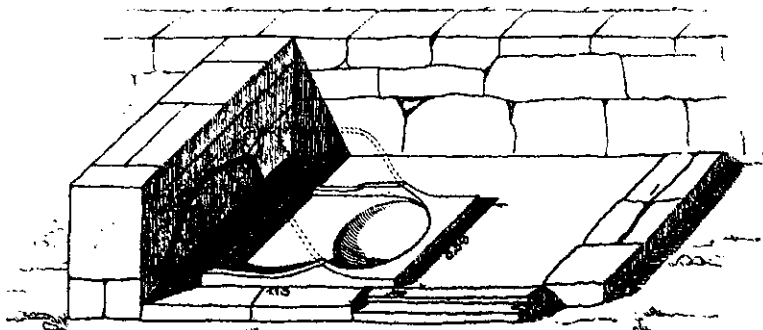


Fig. 3 Priene – Hellenistic bath in House XXI

## PRIVATE BATHING INSTALLATIONS IN ASIA MINOR: THE ARCHAEOLOGICAL EVIDENCE

*Private Bathing before the Romans: Bathrooms in the Hellenistic Houses of Asia Minor*

Before Asia Minor began to fall into Roman hands in 133/129 B.C. with the creation of the *Provincia Asia*<sup>25</sup>, a certain tradition of private bathing already existed in the area. Similar to the private bathing installations known in Classical Greece (e. g. Olynthos) and in the eastern (e. g. Delos and Lousoi) and western Hellenistic World (e. g. *Magna Graecia*)<sup>26</sup>, the domestic baths attested for Hellenistic Asia Minor consisted of terracotta baths of the bathtub or hip bath type, the latter consisting of a seat and a sunk basin for the feet<sup>27</sup>. In these baths, which were sometimes installed in a specific bathroom, the individual bather could – depending of the type of bath – either immerse himself in the (warm) water or pour water on himself with a receptacle. The same types of hip baths/bathtubs were also inserted into Hellenistic public bath buildings for common bathing<sup>28</sup>. Water was conducted to the private bath installations by means of terracotta pipes or manually brought in from external water supply sources, such as wells or cisterns. Some of the baths were provided with – rather simple – heating systems<sup>29</sup>.

Examples of Hellenistic baths are known at Priene, Tarsos and possibly also at Nagidos<sup>30</sup>.

In the small bath room (1.82 m × 1.06 m) that was connected with House XXI at **Priene**, a terracotta seat bath was constructed in the ground (1.15 m × 0.59 m visible at the surface) (*fig. 3*). The back of this hip bath, however, has only been preserved partially<sup>31</sup>.

The terracotta hip bath (1.00 m × 0.80 m) found in a Hellenistic house at **Tarsos** similarly consisted of a seat and a circular depression for the feet. Next to this built bath, which was installed in the north-east corner of the bath room, a rectangular water basin (0.50 m × 0.60 m) in the north-west corner belonged to the bathing installation<sup>32</sup>.

Finally, in one of the ›Terrace Houses‹ of **Nagidos** a private space provided with a basin (0.80 × 0.40 × 0.20 m) that stood in connection with water pipes, has been identified as a possible Hellenistic private bath<sup>33</sup>.

In accordance with their utilitarian hygienic function the Classical and Hellenistic bath rooms, in Asia Minor as well as elsewhere, were characterized by very simple wall and floor decorations, or even lacked any decorative elements<sup>34</sup>. Walls and floor were often simply coated with

<sup>25</sup> Cf. Mitchell 1993; Ferrary 2001; Dreyer 2005; Sommer 2006.

<sup>26</sup> Olynthos: cf. Cahill 2002, 154; van der Ham 2006, 213–214. Delos: cf. Trümper 1998, 62–65 and 2006, 185; Wurmer 2010, 15. See also Ginouvès 1962, 174–179. For drawings and pictures of some Delian examples: cf. Jardé 1906, 661; Marcadé 1953, 583–584. Lousoi: cf. Mitsopoulos-Leon 2010, 50–53; 57 Abb. 6; 61 Abb. 16–17. Hellenistic Sicily: cf. e. g. Crouch 1984; Isler 2010, 318–319. For Hellenistic private baths in general: cf. Trümper 2010, 532–551.

<sup>27</sup> These terracotta bathtubs had precursors in the Greek World during the Bronze Age, Archaic and Classical periods, while examples are also known from the Near East: cf. Cook 1959; Ginouvès 1962, 29–49. For Minoan bathtubs: cf. Kanta 1980. For Mycenaean bathtubs: cf. Vermeule 1965. For Archaic and Classical Greek private baths: cf. Trümper 2010, 530–532.

<sup>28</sup> Cf. Ginouvès 1962, 38–39; Nielsen 1990, 7; Yegül 1992, 24–29.

<sup>29</sup> Cf. Trümper 2010, 532–551.

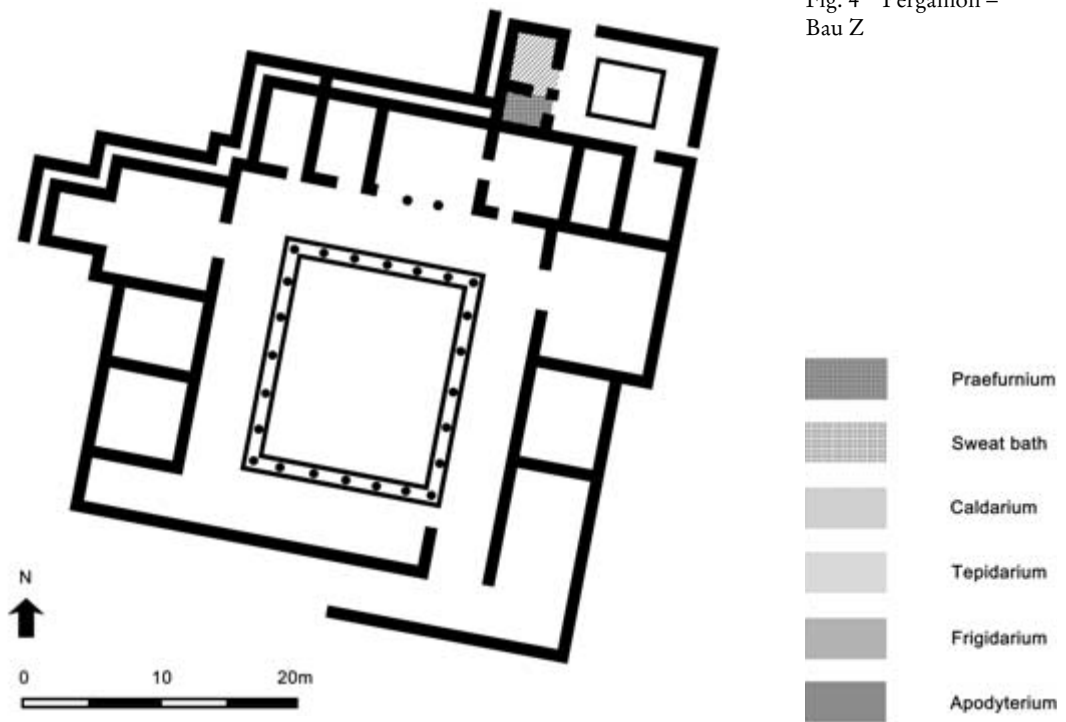
<sup>30</sup> For private baths in Hellenistic houses in Asia Minor: cf. also Rumscheid 2010, 123–124.

<sup>31</sup> Cf. Wiegand 1904, 292. See also Usman 1958, 143–144; Hoepfner – Schwander 1994, 218 and *fig. 186*; Trümper 2010, 545.

<sup>32</sup> Cf. Goldman 1935, 542–543; 1937, 272 and 1950, 13. See also Usman 1958, 143; Ginouvès 1962, 175.

<sup>33</sup> Cf. Durugönül 2007b, 19–20.

<sup>34</sup> Cf. Westgate 2000.



a – water-resistant – mortar layer (e. g. Olynthos and Tarsos<sup>35</sup>). Within the dwellings the bath spaces were frequently located in areas adjacent to the kitchens, to allow the use of a common heating and water infrastructure<sup>36</sup>.

*Private Bath Complexes in Roman and Late Antique Asia Minor: A Chronological Overview*

Private bath complexes continued to be built in the dwellings of Asia Minor once the area had become part of the Roman World. The following chronological overview lists the baths that are known at present in urban house contexts of Roman and late antique Asia Minor. The bath complexes, many of which underwent later adaptations and extensions, are chronologically listed according to their first construction phase.

1. The oldest Roman private bath known in Asia Minor thus far is found in the so-called ›**Bau Z**‹ at **Pergamon**, in the area of the ›Stadtgrabung‹. The building history of this large peristyle house goes back to the Hellenistic Period (early 2<sup>nd</sup> century B. C.)<sup>37</sup>. During a rebuilding phase in the 1<sup>st</sup> half of the 1<sup>st</sup> century A. D. a private bath complex was installed west of the ›atrium‹-like vestibule in the north-east part of the building (fig. 4). The room in the north (ca. 2.0 m × 3.0 m)

<sup>35</sup> Olynthos: Usman 1958, 143. Tarsos: Goldman 1935, 542 and 1950, 13.

<sup>36</sup> Cf. also Nevett 1999, 67 (Olynthos); Ault 2000, 489–490; Cahill 2002, 80–81. 153–154. 161; Hoss 2005, 41 (Palestine).

<sup>37</sup> For the building phases of ›Bau Z‹: cf. Bachmann 2004 and 2010, 180–181. See also Wulf 1998.

had a bath basin decorated with marble. Besides, it was provided with a hypocaust floor that was connected with the *prae-furnium* in the south. During a reorganisation phase in the 2<sup>nd</sup> century A.D. the bathroom went out of use<sup>38</sup>.

2. An Early Roman one-room bath is also attested in one of the – thus far only partially exposed – private dwellings at Erythrai (Cennettepe) on the Ionian Coast (no more precise dating known). The bathroom was provided with a hypocaust system consisting of round *pilae* that underwent several repairs and rebuilding phases. No data have been published on the *prae-furnium* that belonged to this heating system. Whereas the original entrance to the bathing space was located in the south, in Late Antiquity a new entrance was created in the east and the old entrance was blocked<sup>39</sup>.

3. The bath that was installed during the second building phase of ›Wohnheit 1‹ of ›Hanghaus 2‹ at Ephesos (Trajanic Period – late 1<sup>st</sup>–early 2<sup>nd</sup> century A.D.)<sup>40</sup>, forms another example of a one-room bath. However, this bath was at a certain stage temporarily transformed into a multiple-room arrangement<sup>41</sup>.

3a. The original *caldarium* (SR 3 – 27.45 m<sup>2</sup>) was provided with a water basin, placed in a large rectangular niche in the north wall. Besides, it had a *labrum* in an apsidal, white-plastered niche in the east (fig. 5a). The bath, including the northern basin, was heated by means of a hypocaust system that stood in connection with a *prae-furnium* in space SR 4, and by *tubuli* in the south wall.

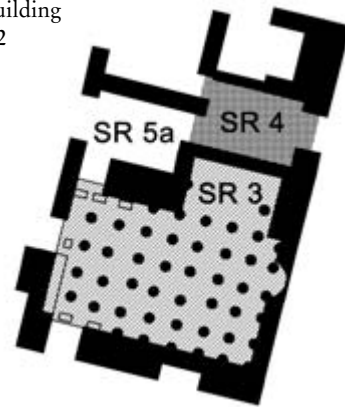
<sup>38</sup> For this bath: cf. Radt 1993, 368; Wulf 1999, 100 and esp. Bachmann 2004, 218 and 2010, 183–184. 191 fig. 13.

<sup>39</sup> Cf. Akalın 2009, 143.

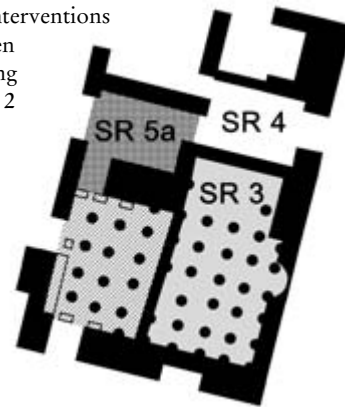
<sup>40</sup> For Building Phase 2 in ›Wohnheit 1‹: cf. Wiplinger 2002, 71; Thür 2007 and esp. Rathmayr 2010a.

<sup>41</sup> The bath in ›Wohnheit 1‹ has preliminarily been discussed by Wiplinger 1997, 77. 80 and 2002a, 72. 74. 79; Ladstätter 2002, 34; Ladstätter *et al.* 2005, 252 n. 10; Zimmermann – Ladstätter 2010, 55. 78. For the final publication of its building history: cf. Rathmayr 2010a and 2010b; Wiplinger – Rathmayr 2010.

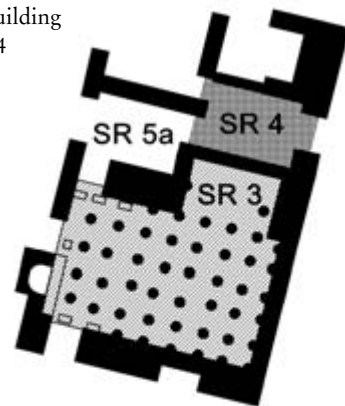
5a Building  
Phase 2



5b Interventions  
between  
Building  
Phases 2  
and 4



5c Building  
Phase 4



0 10m



Fig. 5 Ephesos – ›Hanghaus 2‹ – Bath in ›Wohnheit 1‹ (legend see left, fig. 4)

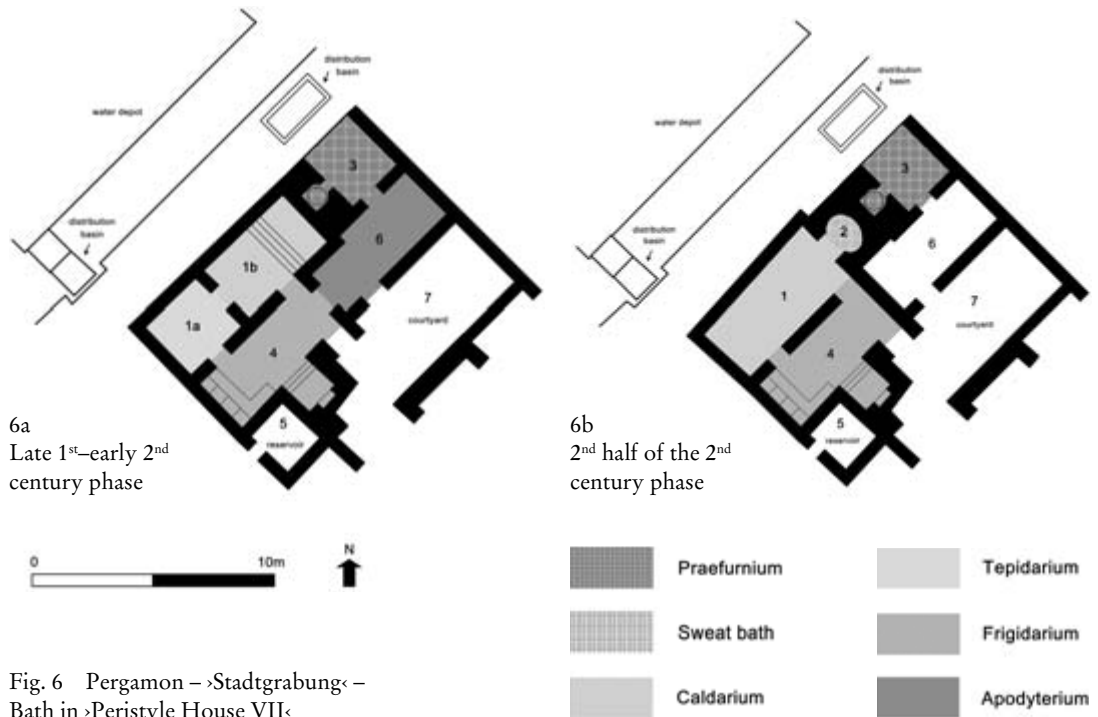


Fig. 6 Pergamon – ›Stadtgrabung‹ – Bath in ›Peristyle House VII‹

The decoration of the bath presumably consisted largely of marble. As attested by old clamps in the wall, the south wall had at this stage certainly a *crusta* decoration composed by a 1.00 m high socle zone, a horizontal border (0.36–0.40 m high) and a large central zone<sup>42</sup>.

Via SR 4 (*praefurnium*) users from ›Wohneinheit 1‹ may have had access to a latrine that was located immediately north of SR 4, on the upper storey of ›Wohneinheit 4‹.

3b. After Building Phase 2, but before Building Phase 4, the bath was – more or less equally – divided in two spaces by means of a narrow north-south running brick wall (fig. 5b). This intervention resulted in a two-room bath consisting of an *apodyterium/tepidarium* and a *caldarium*. The hot bath was heated now by means of a new *praefurnium* that was incorporated in the western part of the north wall of the bath and got its fuel from Space SR 5a.

3c. During Building Phase 4, after a major destruction, the bath complex was extensively rebuilt (*terminus post quem*: 220 A. D.)<sup>43</sup> (fig. 5c). These interventions included the complete re-arrangement of the heating infrastructure. The division wall between the *caldarium* and *apodyterium/tepidarium* was entirely destroyed or dismantled and the *praefurnium* in the north-west (SR 5a) given up. As a result, the bath was turned again into a large one-room installation. The old *praefurnium* in SR 4 was overbuilt with a new one on a somewhat higher level and a water boiler placed over it. Moreover, the *caldarium* (SR 3) received an entirely new hypocaust system with

<sup>42</sup> Cf. Wiplinger 1999, 523, pl. 118, 3.

<sup>43</sup> Cf. Ladstätter 2002, 34; Ladstätter – Pülz 2007, 417–418; Rathmayr 2010a, 96–97.

piers that were built on top of the burnt destruction layer of the old hypocaust system. In addition, the earlier *tubuli* in the south wall were replaced by a single terracotta pipe to evacuate smoke. Apart from this, the east niche for the *labrum* was blocked and replaced by a half-round niche in the west wall. On the other hand, the main bath basin kept its old place in the niche of the north wall. Finally, the room was newly painted with frescoes imitating *crusta* decoration.

The bath stayed in use in this form until an earthquake struck the city in the 3<sup>rd</sup> quarter of the 3<sup>rd</sup> century A. D.

4. The bath complex belonging to ›Peristyle House VII‹ in the area of the ›Stadtgrabung‹ at Pergamon<sup>44</sup> was first constructed in the late 1<sup>st</sup>–first third of the 2<sup>nd</sup> century A. D. and underwent several later alternations.

4a. In its original late 1<sup>st</sup>–early 2<sup>nd</sup> century form (fig. 6a) the bath was more or less contemporaneous with the original bath in ›Wohneinheit 1‹ of the Ephesian ›Hanghaus 2‹, but much more extensive. The Pergamon bath enclosed seven spaces (total surface: 125 m<sup>2</sup>), as well as an adjacent water depot. Three ›specialised‹ bathrooms formed a circular succession of rooms (›simple ring-type‹ bath). Thus, bathers followed a continuous circuit of bath spaces, ending eventually up in the same space where they had started<sup>45</sup>. From the *frigidarium* (Space 4), which was provided with a cold-water basin and seating benches, the *tepidarium* with hypocaust floor in the north-west could be reached (Space 1a). From there, bathers went to take a hot bath in the vaulted *caldarium* (Space 1b) and ended their bath visit again in the *frigidarium*, which was connected with yet another, unidentified room (Space 6 – *apodyterium*?). Space 3 functioned as *praefurnium* for the hypocaust system. The hot air was spread in the spaces by means of *tubuli* in the walls.

4b. At a later stage, during the 2<sup>nd</sup> half of the 2<sup>nd</sup> century A. D., possibly after an earthquake in 178 A. D., the functions of *tepidarium* and *caldarium* were taken over by a single large heated room with hypocaust floor. This space was provided with a marble-clad niche in its eastern corner and stood in connection with an oval-shaped bathroom (sweat-bath – *sudatorium*?<sup>46</sup>) (fig. 6b). Furthermore, the marble decoration of the water basin of the *frigidarium* was renewed and the connection between Spaces 4 and 6 given up. The bath complex stayed in use in this refurbished state until the middle or the 2<sup>nd</sup> half of the 3<sup>rd</sup> century A. D.

5. As was the case with the first baths in ›Wohneinheit 1‹ at Ephesos and in ›Peristyle House VII‹ at Pergamon, the history of the private bathrooms in the ›Urban Mansion‹ at Sagalassos goes back to the late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D.<sup>47</sup>

<sup>44</sup> For this bath: cf. Wulf 1999, 71–99, who defends on p. 91 the identification as private bath: »Da der Zugang zum Badbereich über den Raum VII,9b erfolgte, ist davon auszugehen, daß es sich hier um ein Privatbad handelte und nicht um eine kleine, öffentlich zugängliche Therme«. See also Wulf-Rheidt 2011, 268.

<sup>45</sup> For the ›ring-type‹ bath: cf. Nielsen 1990a, 4 and 1990b, 52.

<sup>46</sup> For sweat-baths: cf. Brödner 1982a and b; Nielsen 1990, 158–161; Yegül 1992, 383–389 and 2010, 94–97; Hewitt 2000, 44–45. Generally a distinction is made between the *sudatorium* and the *laconicum* on the basis of the type of steam that was used, wet or dry steam respectively. However, the difference between these two types of steam baths might also have been related to their heating infrastructure: the *sudatorium* being heated by a hypocaust system and *tubuli*; the *laconicum* making use of a fire place, brazier or hot stones placed within the bath space itself: cf. Nielsen 1990, 158.

<sup>47</sup> For this bath and its evolution phases: cf. Uytterhoeven *et al.* 2001; Uytterhoeven 2007c and in press b; and especially Uytterhoeven – Martens 2008.



7a Late 4<sup>th</sup>–early 5<sup>th</sup> century phase, probably resembling the late 1<sup>st</sup>–early 2<sup>nd</sup> century situation

7b Late, reduced bath

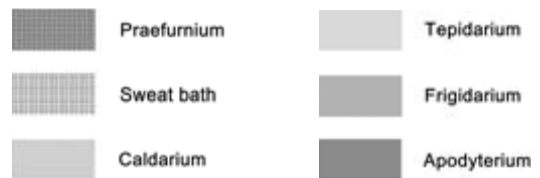


Fig. 7 Sagalassos – Bath in the ›Urban Mansion‹

5a. In this period (*fig. 7a*) the bath complex was installed in the northern section of a peristyle house that had been constructed in the early 1<sup>st</sup> century A.D. and included earlier 1<sup>st</sup> century B.C. structures. The bath enclosed at least four rectangular bathing spaces (total surface: min. 120.215 m<sup>2</sup>), of which – at least – the two most western ones (Rooms IX and X) were in this early stage paved with geometric mosaic floors<sup>48</sup>. Besides, some spaces, but certainly the most eastern bathroom (Room XVI), were provided with a hypocaust system.

5b. The peristyle dwelling with the private baths was continuously repaired, extended and rebuilt during the next centuries. As part of these interventions the baths were entirely reconstructed in the 4<sup>th</sup> century A.D. with respect for the earlier plan. The original mosaic floors of the two

<sup>48</sup> For the mosaics: cf. Uytterhoeven *et al.* in press b.

western rooms were preserved, but the hypocaust system in the eastern room was replaced by a new heating system on a higher level and arranged underneath the floors of the two eastern spaces. The – at least – four vaulted rectangular rooms with NW-SE orientation formed – in line with the precursor bath – a bath complex of the ›axial row-type‹: bathers followed the same straight track from one room to another when entering and leaving the bath, but in reverse direction<sup>49</sup>.

The rooms were all decorated with multi-coloured, presumably geometric, wall paintings<sup>50</sup>. In the *caldarium* (Room X) polychrome – probably geometric – wall paintings in white, red, blue, orange and yellow were applied for the higher sections of the walls. On the other hand, the masonry-built bathtub and the lower part of the walls were clad with marble *crustae*. Some pieces of this marble decoration were recovered *in situ*, whereas collapsed marble fragments and metal clamps were found in the collapse layers.

5c. In the late 4<sup>th</sup>–early 5<sup>th</sup> century A.D. the pre-existing structures in the area, including the rebuilt 4<sup>th</sup> century bath, were incorporated into a large élite residence, enclosing a large representative wing with vestibules and reception spaces, and a private quarter with a bath, courtyards and dining halls. From the private peristyle courtyard visitors entered the *apodyterium* in the east and continued their bath visit in western direction. After having passed the *tepidarium*, they reached the *caldarium* with its apsidal bathtub. The most western room at the end of the track presumably functioned as *frigidarium*.

5d. At a later stage, perhaps in the late 5<sup>th</sup>–early 6<sup>th</sup> century A.D., the set of four bathrooms seems to have been reduced in size (*fig. 7b*). The two eastern rooms (XV and XVI) lost their bathing function after having been dismantled. Their hypocaust floors were removed and the hypocaust arches in the walls blocked. Conversely, the *caldarium* (X) and the *frigidarium* (IX) may have stayed in use as bathrooms.

The baths were in this phase presumably accessed from the south-west, via Room IX that possibly functioned as *apodyterium* now. Consequently, the original ›row-type‹ bath was replaced by a two-room bath, which went – at the latest – out of use when the mansion was abandoned in the mid 7<sup>th</sup> century A.D.<sup>51</sup>.

6. The private bath of the ›axial row-type‹<sup>52</sup> that was installed in the eastern *peristylum* portico in ›Wohneinheit 6‹ of ›Hanghaus 2‹ at Ephesos originally dates back to the first half of the 2<sup>nd</sup> century A.D. (Early Hadrianic Period – Building Phase 2), but underwent several alternations through the centuries<sup>53</sup>.

6a. In the early 2<sup>nd</sup> century the east portico of the peristyle courtyard was subdivided into three bathing spaces (M1, M2 and M3 – total surface: ca. 40 m<sup>2</sup>) by means of wall portions with large arched windows (*fig. 8a*).

<sup>49</sup> For the ›row-type‹ bath: cf. Nielsen 1990a, 4 and 1990b, 51.

<sup>50</sup> For the wall paintings: cf. Uytterhoeven *et al.* in press a.

<sup>51</sup> It is not clear whether or not the former *frigidarium* (Room IX) still functioned as a bathing space when a rubble bench was built against its west wall in the late 6<sup>th</sup>–early 7<sup>th</sup> century A.D.

<sup>52</sup> For the definition of this type of bath: cf. *supra*, note 49.

<sup>53</sup> The publication of ›Wohneinheit 6‹ is currently under preparation under the direction of H. Thür and will appear in the FiE VIII series. For preliminary publications of this bath: cf. Thür 2002, 61; Rathmayr 2009, 313–314; Steskal 2010, 584–585. I thank E. Rathmayr for additional up-to-date information.



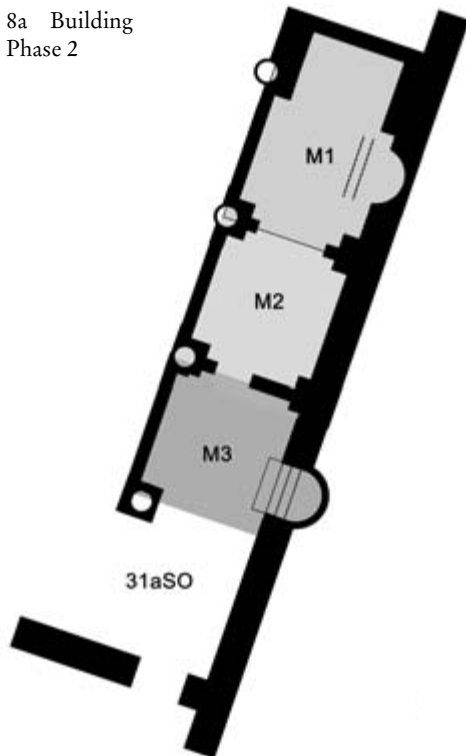
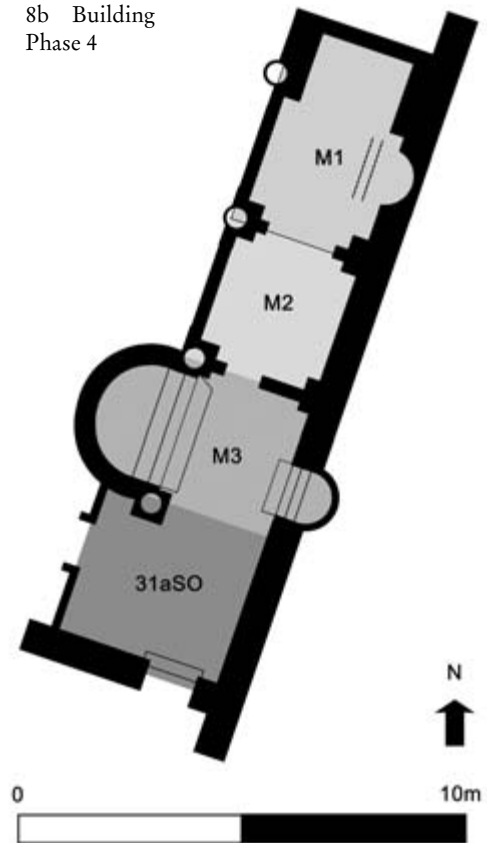
8a Building  
Phase 28b Building  
Phase 4

Fig. 8 Ephesos – ›Hanghaus 2‹ – Bath in ›Wohneinheit 6‹ (legend see right, fig. 9)

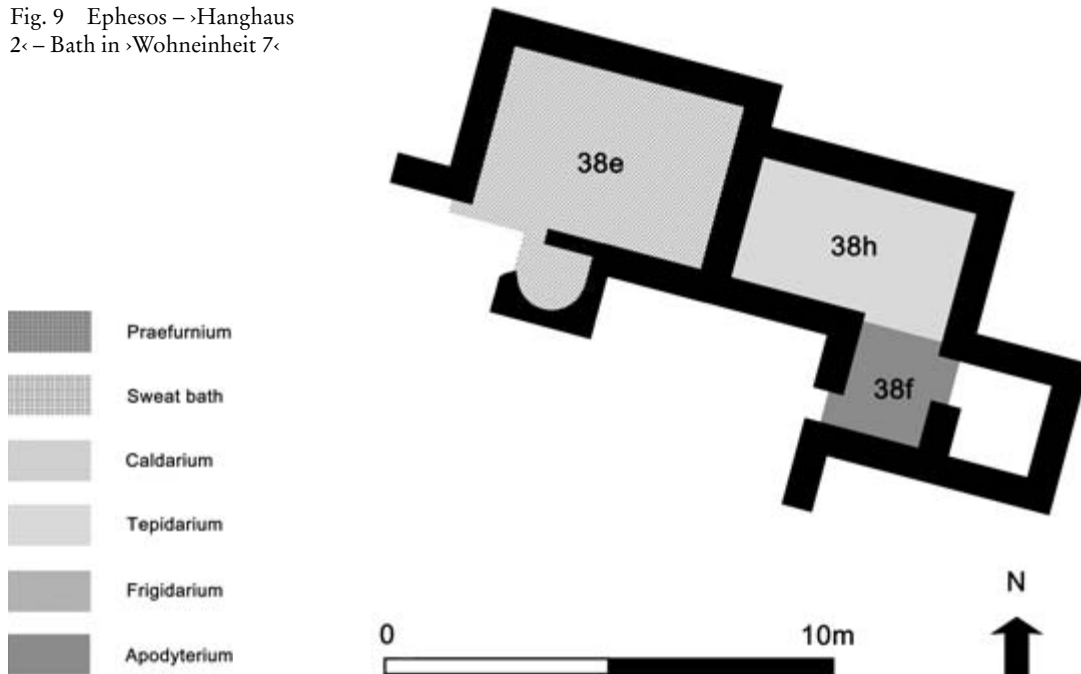
6b. In the late Severan Period (Building Phase 4 – 1<sup>st</sup> half of the 3<sup>rd</sup> century A.D.)<sup>54</sup> this bath was extended with a fourth space that was installed in the very south-east corner of the *peristylum* (31aSO) (total surface: ca. 53 m<sup>2</sup>) (fig. 8b). Besides, Space M3 was now provided with a large apsidal basin in the west, occupying the south-east corner of the peristyle courtyard. The entire bath was richly decorated with marble.

Via a (service) door in the south the bathrooms were connected with the large *triclinium* (the so-called ›Marmorsaal‹) bordering the south portico<sup>55</sup>. Bathers started their bath session in the most southern space that functioned as *apodyterium* (31aSO). From there they continued to the *frigidarium* (M3) with its two cold water basins, each provided with seats. The heated section of the bath consisted of a *sudatorium* (or rather *tepidarium*?) (M2) and a *caldarium* (M1). This *caldarium* was provided with a niche-shaped basin in its east wall and a larger, rectangular warm water bath in the north. Each of these heated rooms had a hypocaust floor and wall *tubuli* in connection with a *praefurnium*, which was located in the east and in the north respectively. The bath stayed in use until the 3<sup>rd</sup> quarter of the 3<sup>rd</sup> century A.D.

<sup>54</sup> For the dating of Building Phase 4 in ›Wohneinheiten 4 and 6‹: cf. Thür 2002, 58 and 2007.

<sup>55</sup> For the connection between the ›Marmorsaal‹ and the bath: cf. Swientek 2007.

Fig. 9 Ephesos – ›Hanghaus 2‹ – Bath in ›Wohneinheit 7‹



7. Another multiple-room bath (total surface: ca. 63 m<sup>2</sup>) existed, possibly already in the early 2<sup>nd</sup> century A. D. but certainly after 230 A. D., in ›Wohneinheit 7‹ of ›Hanghaus 2‹ (fig. 9)<sup>56</sup>. The two actual bathrooms were installed in the north wing of the peristyle courtyard. The eastern room functioned as a warm (or luke-warm?) bathing or dressing space (room 38h), heated by means of a hypocaust system and *tubuli* in the walls. The related *praefurnium* was located in the north-east corner of the peristyle area (room 38f). The western room (room 38e), the presumed *caldarium*, was in its south wall provided with a large marble-clad apsidal bath basin that partly ›encroached‹ the older mosaic floor of the northern *peristylum* portico and was provided with its own water supply and drainage systems. Similarly to the other private baths in ›Hanghaus 2‹ also this bath went out of use after it had been disturbed by an earthquake in the 3<sup>rd</sup> quarter of the 3<sup>rd</sup> century A. D.

8. The early 2<sup>nd</sup> century A. D. ›House of the Mosaics‹ at Iasos, a dwelling following the tradition of the Hellenistic *pastas* house, may also have had a private bath, although a bathing construction has not (yet) been excavated. Hypocaust tiles found out of context in the area suggest that either the ›House of the Mosaics‹ itself or (an) adjacent dwelling(s) was/were equipped with a private bathing installation<sup>57</sup>.

<sup>56</sup> I am grateful to E. Rathmayr for supplying me with information on this bathing installation. The publication of ›Wohneinheit 7‹ is currently being prepared under her direction and will be published as a FiE VII volume. Cf. also Ephesos 2011b.

<sup>57</sup> Cf. Iasos 1969–1970, 525: ›Alcuni dischi in terracotta rinvenuti nei pressi suggeriscono l'esistenza nelle vicinanze di uno stabilimento termale privato.‹ For this ›Villa‹ and neighbouring houses: cf. Baldoni *et al.* 2004, 110–113.

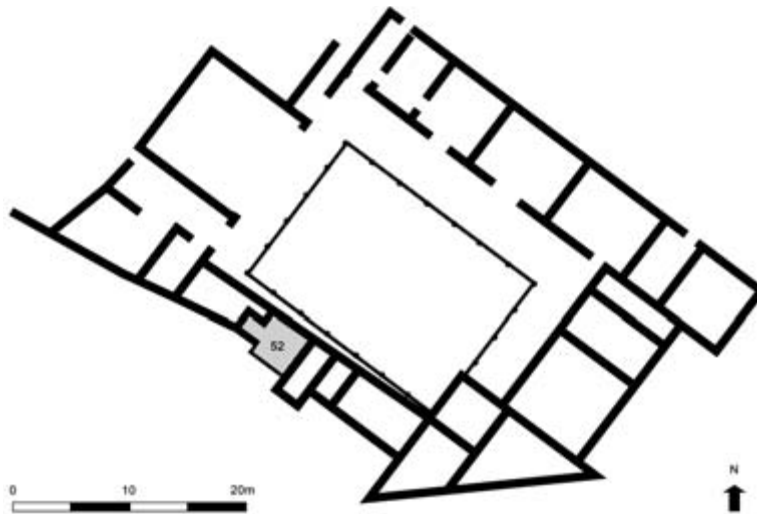


Fig. 10 Pergamon – Bath in the ›Attalos House‹ (legend see right, fig. 12)

9. Probably in the 2<sup>nd</sup> century A.D. the so-called ›Attalos House‹ of Pergamon, whose occupation history goes back to the Hellenistic Period, got a built bathing installation in the cellar under the southern portico of the peristyle courtyard (fig. 10). The bath room (Nr. 52 – 5.00 m × 3.50 m) was provided with a plastered bathtub (Nr. 52) that was accessible by means of steps<sup>58</sup>.

10. On the Panayırdağ at Ephesos a private multiple-room bath complex belonging to a villa is currently under investigation (fig. 11)<sup>59</sup>. Although the bath cannot currently be dated precisely, its construction can be placed between the early 2<sup>nd</sup> century and the 2<sup>nd</sup> half of the 3<sup>rd</sup> century A.D.

The bath incorporated older structures, which may have been part of a private garden *nymphaeum* dating to the first quarter of the 2<sup>nd</sup> century A.D. This original *nymphaeum* included a vestibule (W.: ca. 4.00 m) in the north and an adjacent centralised space in the south. The latter consisted of a circular space with four apsidal niches (diameter: ca. 8.15 m), inscribed in a square, and – presumably – an exedra. In the

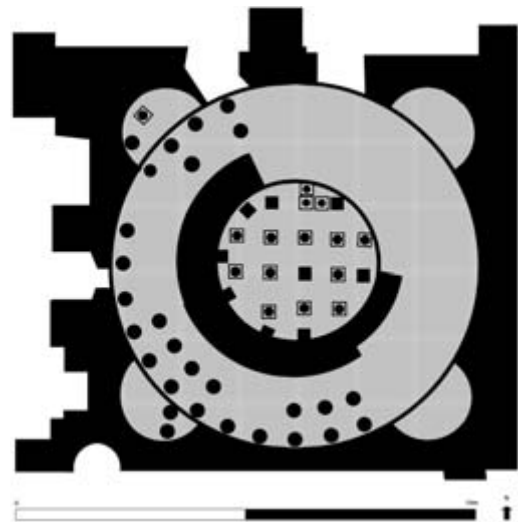
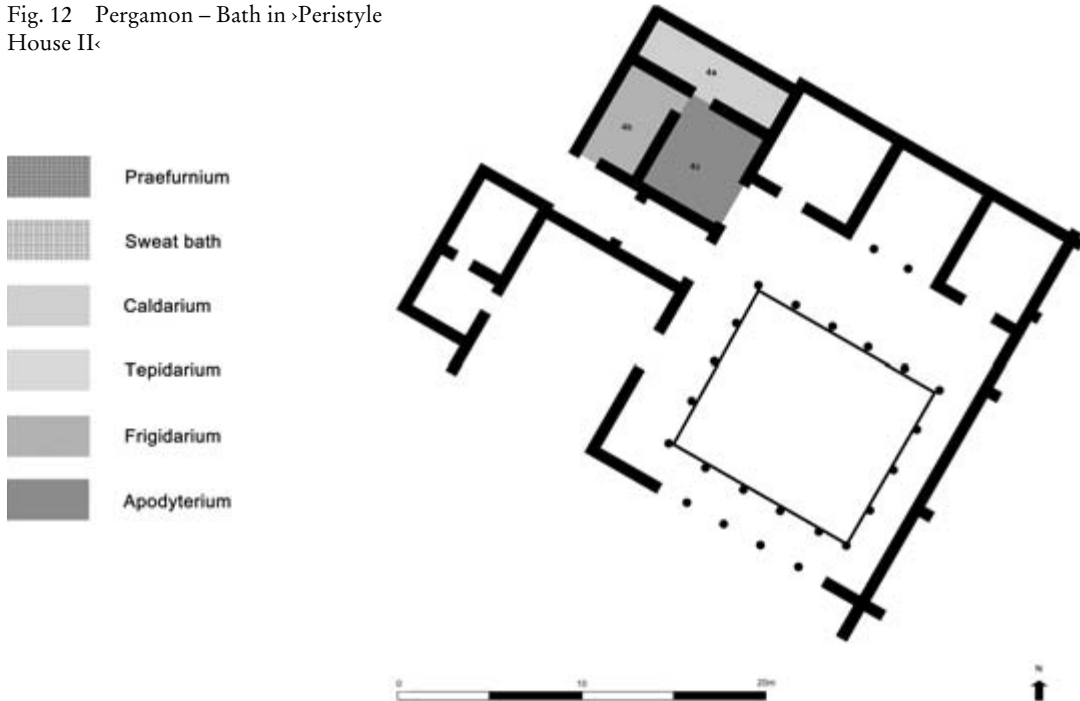


Fig. 11 Ephesos – Bath in the villa on the Panayırdağ (legend see right, fig. 12)

<sup>58</sup> Cf. Dörpfeld 1907, 171. For the 2<sup>nd</sup> century A.D. dating: cf. p. 189. See also Usman 1958, 144.

<sup>59</sup> For this bath: cf. Keil 1932, kol. 12–14; Symposium 2011. Steskal 2010, 585–586 considered this bath a public installation.

Fig. 12 Pergamon – Bath in ›Peristyle House II‹



middle of the central room a water basin surrounded by a marble-clad wall was installed. This wall carried eight columns crowned by an entablature in marble.

When the actual bath complex was built, the centralised room was transformed into a sweat bath<sup>60</sup> with floor and wall heating, while the original vestibule was enlarged and got a hypocaust system. A third – only partially excavated – room (*frigidarium?*), provided with a large basin and richly decorated with wall paintings and glass mosaics, gave access to the sweat bath through three doors in its eastern wall. The bathing spaces were supplied with water by means of a large reservoir that was located to the north-east of the complex.

In the 2<sup>nd</sup> half of the 3<sup>rd</sup> century A. D. the bath seems to have been disturbed by an earthquake. After this event the open spaces between the hypocaust *pilae* were (deliberately?) filled up.

11. From the early 3<sup>rd</sup> century A. D. onwards private bathing activities are certainly attested in ›Peristyle House II‹ at Pergamon, which is located in the area west of the lower agora of the city (fig. 12). The bath that was built in this period, possibly replaced an older, Hellenistic bathing installation<sup>61</sup>. The complex consisted of three small compartments (total dimensions: ca. 85 m<sup>2</sup>). From the *peristylum*, bathers entered the *apodyterium*, which had a wall composed

<sup>60</sup> Keil 1932, kol. 12–14, identified the central space as a *laconicum*. For the distinction between the *sudatorium* and the *laconicum*: cf. *supra*, n. 46.

<sup>61</sup> Cf. Pinkwart – Stammnitz 1984, 43. Although the Imperial bath was first dated to the 1<sup>st</sup> century A. D., Wulf 1999, 100 proposes a dating into the first half of the 3<sup>rd</sup> century A. D.

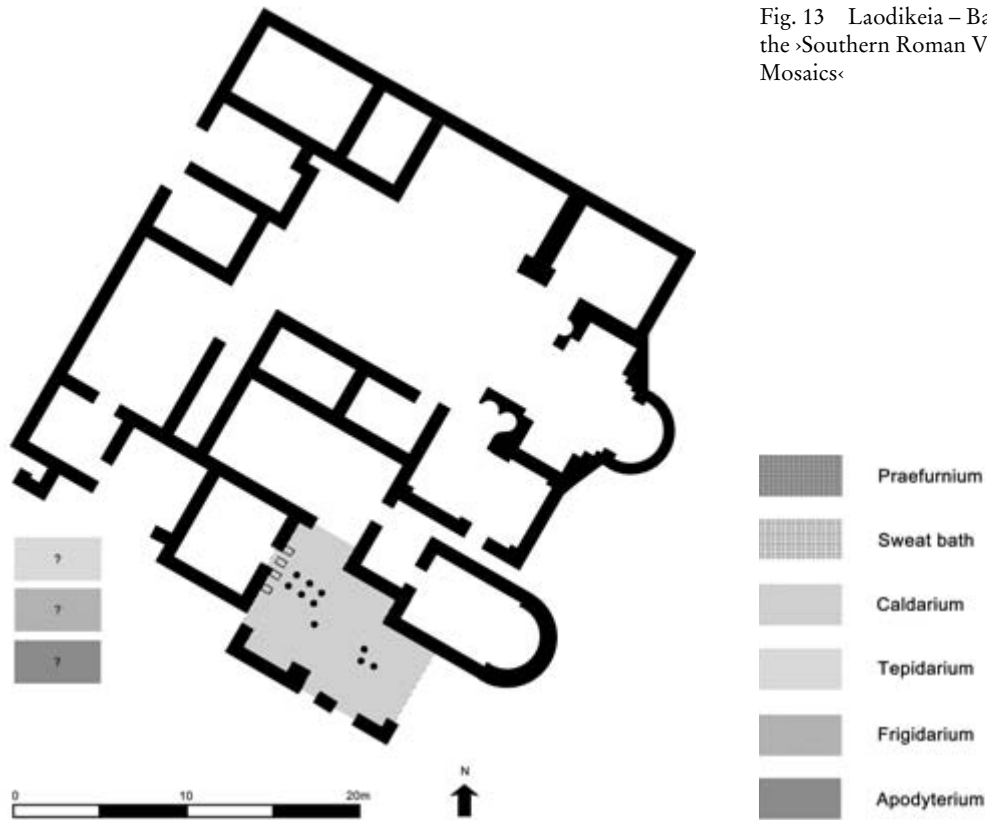


Fig. 13 Laodikeia – Bath in the ›Southern Roman Villa with Mosaics‹

of niches alternating with pilasters (Room 4c). After having taken a warm bath in Room 4a, the *caldarium*<sup>62</sup> with hypocaust heating system, bathers could cool off and rest in Room 4b, the presumed *frigidarium*, which was provided with a bench along its walls<sup>63</sup>.

12. Another, presumably 3<sup>rd</sup> century A.D. bath complex occurred in the so-called ›Southern Roman Villa with Mosaics‹ (›Mozaikli güney Roma villası‹) at Laodikeia *ad Lycum* in Phrygia, which was inhabited between the 1<sup>st</sup> quarter of the 3<sup>rd</sup> century and the 5<sup>th</sup> century A.D. (fig. 13). The current evidence suggests that the bathing installation enclosed several spaces, all decorated with marble. The most southern bathroom (9.50 m × 7.00 m) was provided with a hypocaust floor, which consisted of round *pilae* in the centre of the space and square ones along the walls, and was connected with a *praefurnium*. Hot air was distributed in the walls through hollow spaces created by means of terracotta wall spacer pins. The other bathrooms, however, are not yet known.

After the bath complex went out of use in the 5<sup>th</sup> century A.D. a glass workshop was installed in the south-eastern part of the hypocaust area<sup>64</sup>.

<sup>62</sup> Identified as a *sudatorium* by Pinkwart – Stammnitz 1984, 43.

<sup>63</sup> Wulf 1999, 100–101 identifies this space as a resting room of the bath complex, since no evidence for a cold water basin was found.

<sup>64</sup> Cf. Şimşek 2007, 252–258; 2008a; 2008b, 109 and 2009, 422–423.

13. The ›**Tetraconch Building**‹ at **Labraunda** (fig. 14) may have belonged to a not yet fully explored late antique residential complex that was presumably constructed in the late 4<sup>th</sup>–5<sup>th</sup> century A.D.<sup>65</sup>. The building consisted of a vaulted central space with four symmetrically arranged horse-shaped apses (exterior diameter: ca. 7.65 m; interior diameter: ca. 6.5 m) and probably functioned as a sweat bath. It was accessed from its eastern apse, where the door and a window were located, and heated by means of a hypocaust system that stood in connection with a *praefurnium* located west of the western apse. Apart from the ›**Tetraconch Building**‹ other – not (yet) excavated – specialised spaces may have been part of the same private bath complex.

The ›**Tetraconch**‹ seems to have lost its bathing function in the late 5<sup>th</sup>/early 6<sup>th</sup> century A.D., when the hypocaust was filled up with discarded pottery and waste material, and a new floor was installed.

14. The **peristyle residence** that was in the early 5<sup>th</sup> century A.D. built in the so-called ›**Paktolos North**‹ suburb of **Sardis**, west of the main street, incorporated an earlier, presumably 4<sup>th</sup> or early 5<sup>th</sup> century, bath. This bath may have functioned as a small public bath building before it was integrated in a luxurious private dwelling<sup>66</sup>.

15. The bath complex in the 5<sup>th</sup> century A.D. ›**Terrace House**‹ (›**Yamaç Ev**‹) at **Antandros** formed a bended row of specialised bathrooms (›angular row-type‹)<sup>67</sup>: after having taken a bath bathers had to come back along the same track as they had accessed the various bathrooms, but the sequence of rooms was arranged in a corner<sup>68</sup>.

15a. A visit to the original late antique bath of ca. 130 m<sup>2</sup> (fig. 15a) started in the *apodyterium* (Room 7), which had three marble-clad niches in its walls and a – later added – bench. The floor of this dressing room was paved with a geometric mosaic bordered by *hedera* leaves, crosses, a crater and a pair of shoes/sandals. The walls had wall paintings, which have been fragmentarily preserved on the south wall and represent an Ionian column and a green border in ›imitation marble‹. A door in the south wall of the *apodyterium* led to the *tepidarium* (Room 8), which was provided with two masonry-built bathtubs that were each accessible by means of steps.

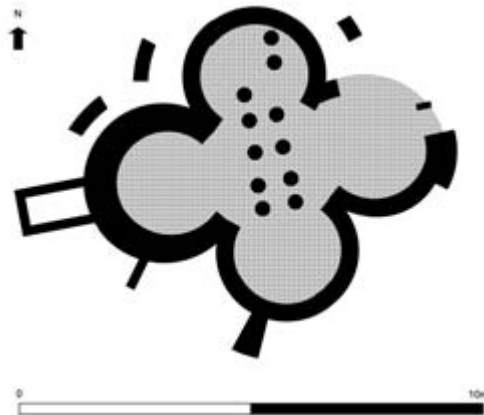


Fig. 14 Labraunda – ›**Tetraconch**‹ (legend see left, fig. 13)

<sup>65</sup> For this bath: cf. Karlsson 2008, 126 (here considered part of the new West Church); 127 fig. 24; 2009, 111 (here identified as a Byzantine baptistery) and 2010, 357–359; 368 fig. 9; 369 fig. 10; 370 fig. 13. A coin of Constantius II, dating to the period 348–357/58 A.D., found in the floor, forms a *terminus post quem* for the construction of the ›**Tetraconch**‹: cf. Labraunda 2009.

<sup>66</sup> Cf. Foss 1976; Ellis 1997, 39. For this dwelling: cf. also Hanfmann 1963, 20–23, 26–30 and 1964, 20–24.

<sup>67</sup> For this bath: cf. Polat – Polat 2006, 90–91; Polat *et al.* 2007, 44–45, 47; Polat *et al.* 2008, 457.

<sup>68</sup> For the ›angular row-type‹ bath: cf. Nielsen 1990a, 4 and 1990b, 51.



Also the walls of this bath space had paintings. As indicated by the negative traces in the mortar substrate, the floor of the *tepidarium* was paved with *opus sectile*. Finally, from the *tepidarium* the apsidal-shaped *caldarium* (Room 9) with half rounded bathtub was accessed. This space was heated by a hypocaust system that stood in connection with a *praefurnium* on a lower terrace.

15b. During later interventions the portico giving access to the *apodyterium* was walled up and the water basins of the *tepidarium* were separated from the rest of the room (fig. 15b). Besides, the *caldarium* was reduced, its hypocaust system broken out and a kiln constructed in the now no longer used original *praefurnium*. The small *caldarium* got a new *praefurnium* at its north-east corner, while also a new water pipe system was arranged.

16. In the 5<sup>th</sup> century ›Tetrapylon House‹ at Aphrodisias two rooms in the north of the excavation zone have been identified as the *apodyterium* and *caldarium* of the dwelling (fig. 16)<sup>69</sup>. In the

<sup>69</sup> For this bath: cf. Erim 1985, 543; Naumann *et al.* 1985, 178; Campbell 1991, 16 and 1996, 195. See also Baldini Lippolis 2001, 120.

dressing room, which was provided with a stone bench, numerous fragmentary *unguentaria* for perfumed oil were found. The walls of this space incorporated several horizontally and vertically running water pipes. The actual bathroom, to which the *apodyterium* gave access, consisted of a marble-paved space. Since the ground plan of the dwelling is only partially known, it cannot be excluded that this bathing installation consisted of more, still unexcavated, spaces.

17. The two-room bath (ca. 117 m<sup>2</sup>) in the south wing of the peristyle courtyard of the **Triconch House** (or so-called ›**Bishop's Palace**‹), also at **Aphrodisias**, can, unfortunately, not precisely be dated, but presumably has to be placed in the 5<sup>th</sup> century A.D. (fig. 17)<sup>70</sup>. In order to install the bath two spaces decorated with 3<sup>rd</sup> or 4<sup>th</sup> century A.D. wall paintings (*i. e. terminus ante quem* for the construction of these spaces) underwent a thorough reorganisation, including

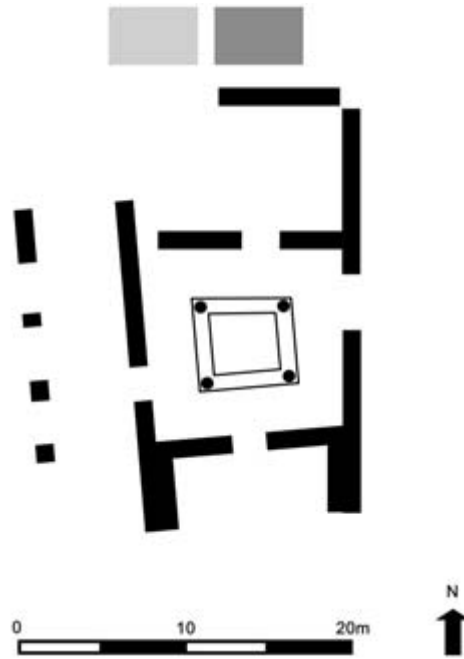
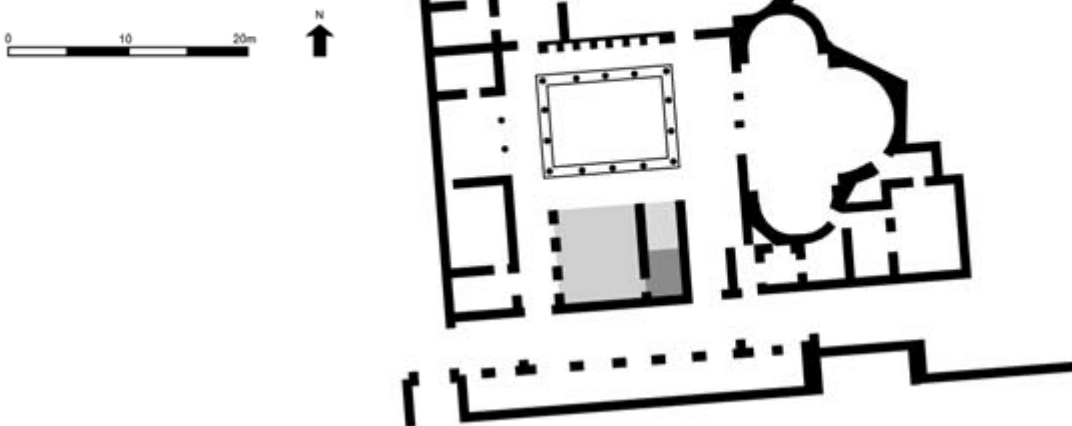


Fig. 16 Aphrodisias – Bath in the ›Tetrapylon House‹ (legend see left, fig. 15)

Fig. 17 Aphrodisias – Bath in the ›Triconch House‹ (›Bishop's Palace‹) (legend see left, fig. 15)



<sup>70</sup> For this bath: cf. Erim 1986, 72; Berenfeld 2009, 205–206. 210. 215. 217.



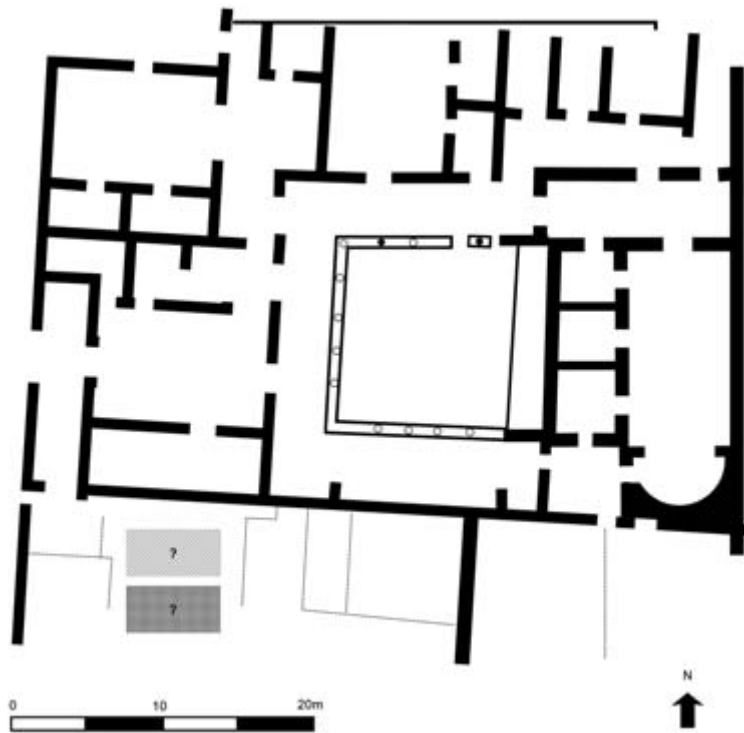


Fig. 18 Xanthos –  
 ›House on the Lycian  
 Acropolis‹ (legend see  
 right, fig. 19)

the raising of the floor level<sup>71</sup>. The eastern space was provided with a hypocaust system (*apodyterium* or *tepidarium*?) and interrelated with a larger bathroom in the west, which had a built bath basin (*caldarium*?). The rich decoration of the western room included marble wall revetment and an *opus sectile* floor in black and white marble forming a checkerboard pattern. The baths were supplied via the main water channels in the area, while waste water was drained by means of flower-shaped drains cut into the floor tiles of the western bathing space.

18. Also the inhabitants of the 5<sup>th</sup> century A.D. ›House on the Lycian Acropolis‹ at Xanthos may have disposed over their own private bath complex (fig. 18). The bathrooms here were presumably located in the southern wing of the building. Unfortunately, this southern part of the dwelling was largely dismantled in 1958 when the excavators of that time tried to reach the Lycian levels of the acropolis<sup>72</sup>. A – still preserved – space with mosaic floor in this southern area and a related furnace that was destroyed during the early excavations, may have belonged to a bathing installation<sup>73</sup>.

<sup>71</sup> Cf. Berenfeld 2009, 217. Baldini Lippolis 2001, 120 places the bathrooms wrongly in the south-west corner of the residence (Rooms 13 to 16).

<sup>72</sup> Cf. *supra*, n. 14.

<sup>73</sup> Cf. Manière-Lévêque 2007b, 488.

Fig. 19 Ephesos – Bath in the ›Byzantine Palace‹



19. Finally, the partly excavated ›Byzantine Palace‹ at Ephesos included a much extended private bath complex of 900 m<sup>2</sup> (fig. 19)<sup>74</sup>. The baths of this large 5<sup>th</sup>–6<sup>th</sup> century A. D. elite residence not only offered bathing sessions from cold over lukewarm to hot water by means of a *frigidarium*, a *tepidarium* and a *caldarium*, but also included a ›sauna‹ (*sudatorium*) and a small sporting terrain (*palaestra*). The orientation of the bath spaces clearly diverges from that of the rest of the late antique complex, which points to different building phases. Possibly the bathing installation goes back to the Imperial Period, when it may have been intended as a public building<sup>75</sup>.

<sup>74</sup> For this bath: cf. Steskal 2010, 583–584; Ephesos 2011a. On the ›Palace‹ in general: cf. Ladstätter – Pülz 2007, 405–407.

<sup>75</sup> In this area (an) earlier rich house(s) dating to the period between the 1<sup>st</sup> and the 3<sup>rd</sup> centuries A. D. is attested: cf. Zimmermann – Ladstätter 2010, 139–140; Ephesos 2011a. Karwiese 2000 and Baldini Lippolis 2001, 196 place the baths in the 1<sup>st</sup> century A. D. Groh *et al.* 2006, 103–104 discuss these baths together with the Imperial public baths of Ephesos.

In addition to the above-mentioned Roman and late antique private bath complexes future research on Roman and late antique housing in Asia Minor will no doubt reveal new examples. For instance, private dwellings currently still under study, including those on the so-called ›Musalla Mezarlık‹ at Pergamon<sup>76</sup>, may have had their own bathrooms. Besides, other private bathing installations are still awaiting publication (e. g. Izmir<sup>77</sup>).

PLAN, INFRASTRUCTURE AND DECORATION OF THE PRIVATE BATHS  
OF ROMAN AND LATE ANTIQUE ASIA MINOR

*Plan and Dimensions of the Private Bathing Installations*

In spite of the relative small number of private bathing installations that are currently known for Imperial and late antique Asia Minor, the overview presented above suggests that the bathrooms progressively extended, evolving from simple, one-room baths to large multi-room complexes. As implied by the evidence, the plans of the baths seem to have become more and more complex through the centuries as a result of combining several specialised bathrooms. In addition, also the individual bath spaces took gradually larger dimensions.

The earliest examples, dating to the 1<sup>st</sup> century A.D., seem to have been basic installations existing of a single heated room. The combination of a *caldarium* with hypocaust floor heated by means of a *praefurnium* is attested in the early 1<sup>st</sup> century A.D. bath of ›Bau Z‹ at Pergamon (1) and – presumably – also at Erythrai (2).

In relation with these one-room baths it should be mentioned that the combination of a single heated space and a hypocaust floor with related *praefurnium* seems to have been a reoccurring architectural feature in early 1<sup>st</sup> century A.D. house contexts. However, as evidenced in ›Hanghaus 2‹ at Ephesos, this arrangement did not exclusively appear in baths, but was also applied for reception/dining spaces (fig. 2). Examples include Room SR 26 in ›Wohneinheit 5‹, Room 36d in the west wing of the peristyle courtyard of ›Wohneinheit 6‹ and the space that formed the upper floor of this Room 36d. In these ›winter *triclinia*‹ the hypocaust floors allowed heating of the rooms in cold periods<sup>78</sup>. A similar configuration may have existed during the early 1<sup>st</sup> century A.D. in ›Wohneinheit 2‹, where a test sounding executed under the current floor level of the so-called ›Room of the Muses‹ revealed the brick piers of an earlier hypocaust floor (SR 12). Traces of the *praefurnium* that was connected with this hypocaust system, however, have not been found<sup>79</sup>. In this case it is, unfortunately, no longer possible to retrace whether the hypocaust (and its related *praefurnium*) was associated with an earlier – disappeared – private bath or a representative space (›winter *triclinium*‹). Nevertheless, given the multi-functional character

<sup>76</sup> I thank A. Wirsching for bringing under my attention that these houses were presumably provided by baths, as suggested by the small finds. For these houses: cf. Boehringer 1959, 146–147 and esp. Wirsching 2010.

<sup>77</sup> In Izmir recently two 2<sup>nd</sup>–3<sup>rd</sup> century A.D. houses have been excavated, of which one may have been provided with a private bath. These new results were presented by A. Ersoy during his lecture ›Smyrna: Yeni Keşfedilen Kamu Yapıları ve Alanlar (2007–2010)‹ at the conference *Harbors and Harbor Cities in the Eastern Mediterranean from Antiquity to Byzantium. Recent Discoveries & New Approaches* (DAI – Istanbul and Koç University RCAC – Istanbul, 30 May–1 June 2011).

<sup>78</sup> Cf. Thür 2005a, 5 (esp. n. 41). For spaces with hypocaust heating but without bathing function: cf. also *supra*, p. 291.

<sup>79</sup> Cf. Ladstätter *et al.* 2005, 252.

of spaces in Greek and Roman houses, it cannot be excluded that these ›winter *triclinia*‹ were at certain moments ›transformed‹ into bathing spaces by bringing in portable water basins<sup>80</sup>.

Real one-room baths continued to be built during the 2<sup>nd</sup> and 3<sup>rd</sup> centuries A. D., as is attested in ›Wohneinheit 1‹ of ›Hanghaus 2‹ at Ephesos (3a and 3c) and the ›Attalos House‹ at Pergamon (9). However, the bath in the Ephesian ›Wohneinheit 1‹ illustrates that in this period these one-room baths could take rather large dimensions. On the other hand, the much smaller bath at Pergamon apparently lacked any kind of wall or floor heating, which suggests that it functioned as a simple washing-room that was less developed than, for instance, the 1<sup>st</sup> century A. D. one-room bath of ›Bau Z‹ in Pergamon (1).

From the late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D. onwards, however, private bathing installations seem to have generally become more complex. From now on the warm bath was mostly extended with – at least – a dressing room (*apodyterium*) or a lukewarm bath (*tepidarium*), or a room that combined both functions. This resulted in the appearance of two-room bath complexes. An example of this type is the bath in ›Wohneinheit 1‹ of ›Hanghaus 2‹ at Ephesos during the period between Building Phase 2 (Trajanic Period) and Building Phase 4 (post-220 A. D.) (3b).

The late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D. bath complex of ›Peristyle House VII‹ at Pergamon (4a) illustrates how – already from this rather early moment onwards – in some houses even more space was reserved for bathing installations. In these cases the baths frequently took the shape of a ›ring‹ (e. g. ›Peristyle House VII‹ at Pergamon – 4) or ›row‹ (e. g. late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D. bath at Sagalassos – 5a; bath in the east portico of ›Wohneinheit 6‹ in ›Hanghaus 2‹ at Ephesos from the early 2<sup>nd</sup> century A. D. onwards – 6) of three or more bathing rooms with each their specialised function. These generally included a dressing room (*apodyterium*), cold bath (*frigidarium*), lukewarm bath (*tepidarium*) and warm water bath (*caldarium*). In some cases a sweat bath (›sauna‹) was added (e. g. the 2<sup>nd</sup> half of the 2<sup>nd</sup> century A. D. phase bath of ›Peristyle House VII‹ at Pergamon – 4b; the bath of the villa on the Ephesian Panayırdağ – 10).

This type of elaborate baths continued to be built during the 3<sup>rd</sup> century A. D., as attested by the bath of ›Peristyle House II‹ in the area west of the Lower Agora at Pergamon (11), that in the ›Southern Roman Villa with Mosaics‹ at Laodikeia (12) and the extended four-room ›row-bath‹ in the eastern portico of the peristyle courtyard in ›Wohneinheit 6‹ of the Ephesian ›Hanghaus 2‹ (6b).

The multiple room bathing installations developed during the 2<sup>nd</sup> and 3<sup>rd</sup> centuries A. D. were the precursors of the even more elaborate and luxurious bath complexes of the late antique period. The bathing installations of the élite mansions of the 4<sup>th</sup>–5<sup>th</sup> and (early) 6<sup>th</sup> centuries A. D. almost all consisted of numerous bathing rooms, arranged according to a fixed succession (*apodyterium* – *tepidarium* – *caldarium* – *frigidarium*). This is for instance illustrated in the Urban Mansion at Sagalassos, which had in the 4<sup>th</sup> and 5<sup>th</sup> centuries a bath of the ›axial row-type‹ (5b and 5c), and by the ›angular row-bath‹ of the 5<sup>th</sup> century A. D. ›Terrace House‹ at Antandros (15a). Parallel with these baths, it can be assumed that the 5<sup>th</sup> century A. D. bath of the ›Tetrapylon House‹ at Aphrodisias (16) consisted of more rooms than the thus far excavated *apodyterium* and *caldarium*, and that the ›House on the Lycian Acropolis‹ at Xanthos (18) similarly disposed of an elaborate

<sup>80</sup> Cf. Thür 2007 n. 34. For the multi-functionality of rooms in Greek houses: cf. e. g. Nevett 2001. Apart from the above-mentioned examples of the single room with hypocaust-*praefurnium* configuration, a hypocaust system is also attested in relation to the mid-2<sup>nd</sup> century A. D. representative *basilica privata* in ›Wohneinheit 6‹ of ›Hanghaus 2‹: cf. Gessl 2007.

bathing installation. The two-room bath in the ›Triconch House‹ (›Bishop's Palace) at Aphrodisias (17) is an exception on these late antique multiple-room baths, but the lack of a larger number of specialised bathrooms is here compensated by the dimensions of the individual bathing spaces.

The evolution from single-spaced baths to large private bath complexes, which could take a large variety of shapes, ranging from ›rows‹ to ›rings‹ of specialised bathrooms, each with their own controlled temperatures, does not seem to have been a specific characteristic for Asia Minor, but was apparently a general development, also noticeable in other parts of the Roman Empire. For Campania (esp. Pompeii) a (chrono-)typology of private baths has been composed, evolving from simple to complex<sup>81</sup>. Also in Greece more extended private bath complexes seem to have appeared at a later date than the first more simple examples. These larger examples occurred from the 3<sup>rd</sup> century A.D. onwards into Late Antiquity<sup>82</sup>.

Concerning Late Antiquity the existence of large private bathing installations was in line with the general increase in dimensions and wealth of late antique private (élite) dwellings, which started from the 4<sup>th</sup> century A.D. onwards and can be understood within the framework of the general political and socio-economic changes in the cities during that period. New groups of aristocrats, including *principales*, *honorati* and bishops, which surpassed the *curiales* who had previously been so important, in power and wealth, played the most important role in urban life<sup>83</sup>. More than in earlier times the members of these new aristocratic groups used their private residence as a means to display their élite position in society, their power and wealth. The (social and political) ›public‹ role of the late antique élite house, including the reception of clients, business relations and other guests, thus became more explicit than before<sup>84</sup>. As a consequence, late antique élite members focused in their houses on representation and impression. This resulted – both in the East and the West – in impressive ›palace-like‹ dwellings characterized by a common architectural language that was expressed by means of large dimensions, expensive materials and rich decorative programmes<sup>85</sup>. In particular spaces with a ›public‹ function, such as reception halls, dining rooms and private baths, thus seem to have been used as means to impress and overwhelm<sup>86</sup>.

In spite of these general evolutions it should be taken into account that simple, one-room baths may have continued to be constructed alongside the more elaborate and sophisticated examples of the Mid and Late Imperial Periods, as suggested by the – presumably – 2<sup>nd</sup> century A.D. bath in the ›Attalos House‹ at Pergamon (9). For instance, in Greece, where more houses with private baths have been investigated than in Asia Minor thus far, one-room baths kept on occurring during the entire Imperial and even late antique periods, indicating that house owners could still opt for relatively limited bathing installations in later times. In contrast, Greek two-room baths seem to have been limited to the period between the 1<sup>st</sup> and 3<sup>rd</sup> centuries A.D.<sup>87</sup>.

<sup>81</sup> Cf. e. g. de Haan 2001 and esp. 2010. For instance, *lavatrinae*, one-room baths without heating system, form a first class of Pompeian bathrooms in de Haan's classification. Her second class included baths, consisting of a combined *apodyterium/tepidarium* and a *caldarium*: cf. de Haan 2001, 41–42.

<sup>82</sup> Cf. Bonini, 146–149. From the 4<sup>th</sup> century A.D. onwards large bath complexes reached their climax in Greece.

<sup>83</sup> For the late antique élite in general: cf. Brown 2000, 321–346; Laniado 2002.

<sup>84</sup> This is illustrated by Ellis 1991a; 1991b, 573–576 and 1997, 46–47; Scott 2004.

<sup>85</sup> Cf. also Baldini Lippolis 2001, 64; Ghiotto 2003, 227. For the common features of late antique élite residences all over the Empire: cf. e. g. Ellis 2004, 38. For the close relation between the palace architecture of this period and the architecture of other types of élite houses: cf. Duval 1984 and 1987, 463–490; Scagliarini Corlaita 2003.

<sup>86</sup> Cf. Hansen 1997; Scott 1997 and 2004; Baratte 2001, 278.

<sup>87</sup> Cf. Bonini 2006, 145.

*Some Technical Aspects: Water Supply, Drainage, Heating and Lightning of the Baths*

Water Supply and Drainage

The evidence of private baths in Roman and late antique Asia Minor suggests that the availability of water formed a first *condition qua non* for the well-functioning of a private bath. Especially in the case of extended private bathing facilities, provided with several specialised rooms with their own water basin(s), a good water supply and discharge system must have been indispensable, given the number of supply and drainage pipes and channels that have been found in relation to most of the baths under discussion. However, due to the lack of detailed studies and the often bad preservation condition of the baths, the evidence for supply and drainage is largely fragmentary and does not allow us to get a complete picture of the functioning of the water systems in individual houses. Nevertheless, the available data give some important hints on the supply and discharge systems that were in use.

*Public Water Supplies and Private Connections with the Public Systems*

The link between private water systems, supplying baths as well as other water facilities (e. g. ornamental fountains), and the public supply and drainage systems have been investigated only for a limited number of individual houses, including examples from Ephesos, Pergamon and Sagalassos<sup>88</sup>. In addition, large-scale studies of the public water network of Ephesos have shown how public supply channels were diverted towards residential areas and connected with the water systems of individual houses<sup>89</sup>. Similarly, private waste water was discharged by means of private channels ending in the public sewer systems. Consequently, the capacities of the public network must have had a major influence on the possibilities and limitations of water provision in private contexts.

In line with this, it has been suggested for Ephesos that the extension of the public water network from Augustus' reign onwards and the introduction and development of private baths can chronologically be linked with each other<sup>90</sup>. The same observation has been made for Pompeii, where the construction of private baths has been related with the Augustan aqueduct of the town<sup>91</sup>. Similar to the evolution of public bath buildings<sup>92</sup>, the available evidence indeed seems to point out that the presence of water facilities in private houses was closely interwoven with the availability of a good urban water network and sufficient urban water supplies.

The Augustan Period introduced a period of peace and prosperity in Asia Minor, typified by large urbanistic developments, including the construction of elaborate urban water supply

<sup>88</sup> Ephesos (Hanghaus 2): cf. e. g. Lang-Auinger 1996, 176–180; Michalczuk 2005; Thür 2005b; Wiplinger 2006b; Rathmayr 2010a, 91. 97; 2010b, 379. Pergamon: Wulf 1999. Sagalassos: cf. Uytterhoeven – Martens 2008.

<sup>89</sup> Cf. Ortloff – Crouch 2001, 852–856, who links the choice to build private and public buildings in the north-east area of the ›Kuretenstraße‹ with the availability of large water supplies on the north slope of the Bülbül Dağ. Houses in the south-east area of the city were supplied by the Selinus aqueduct system, while the Kaystros system provided the residential quarters on the western and south-western slopes of the Panayırdağ. For the aqueducts of Ephesos: cf. further Öziş – Atalay 1999; Scherrer 2006. For the Ephesian water system: cf. also Groh *et al.* 2006, 105–106.

<sup>90</sup> Cf. Wiplinger 2002.

<sup>91</sup> Cf. de Haan 2001, 100; Zanovello 2003, 304; Jones – Robinson 2005, 123; Jansen 2007, 260. See also Gros 2001, 223.

<sup>92</sup> Cf. Coulton 1987, 82; Nielsen 1990, 23–24; Yegül 1992, 391–395 and 2010, 98–99; Owens 2005, 38. Examples are Troy (cf. Aylward 2006) and the region of Cilicia (cf. Spanu 2003, 11–13).

systems<sup>93</sup>. The evidence for private bathrooms available at date suggests that the building date of the first large aqueducts in Asia Minor under Augustus and his successors coincides with the appearance of the first private one-room baths with hypocaust heating, such as the bath in ›Bau Z‹ at Pergamon (1).

The Early Imperial Period formed the starting point for further urbanisation and development that would follow during the next two centuries<sup>94</sup>, a time span coinciding with the period during which bath spaces in a private context started to take larger dimensions than they had before, as is illustrated by the examples of ›Peristyle House VII‹ at Pergamon (4a) and the ›Urban Mansion‹ at Sagalassos (5a). In ›Hanghaus 2‹ at Ephesos, where in the late 1<sup>st</sup> and early 2<sup>nd</sup> centuries A. D. baths were added to the already existing water facilities in ›Wohninheit 1‹ (3a), ›Wohninheit 6‹ (6a) and possibly also already in ›Wohninheit 7‹ (7), the installation of water facilities was made possible thanks to the supply of the 1<sup>st</sup> century A. D. Kenchrios aqueduct system and a supply channel running under ›Hanghaus 2‹ and ›Hanghaus 1‹<sup>95</sup>.

Later developments of the urban water network certainly created additional opportunities for private house owners to enhance their dwellings with baths and fountains. For instance, at Pergamon the extension of the Hellenistic Madradağ Aqueduct in the late 2<sup>nd</sup> century A. D. adding to the existing public water supplies<sup>96</sup>, must have resulted in the construction of new private water facilities, similar to the early 3<sup>rd</sup> century private bath in ›Peristyle House II‹ (11). Likewise, at Sagalassos the water supply of the private bath complex of the ›Urban Mansion‹ was, from the late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D. onwards into Late Antiquity (5a–d), realized thanks to the access to the public water network supplied by the five aqueducts of the town<sup>97</sup>. Finally, the water supply of the 3<sup>rd</sup> century A. D. bath in the so-called ›Southern Roman Villa with Mosaics‹ at Laodikeia (12) was similarly made possible thanks to the well-developed water network of the city<sup>98</sup>.

Apart from parallels with Italy (e. g. Pompeii)<sup>99</sup>, also other areas of the Western and Eastern Mediterranean outside Asia Minor seem to have undergone a similar evolution. For instance, the development of private baths in some houses at Volubilis in Northern Africa has been connected with the construction of an aqueduct in the city<sup>100</sup>. Likewise, studies carried out in Roman Greece have shown that here too the presence of aqueducts played a crucial role in the appearance and development of private water-related features during the Roman Period<sup>101</sup>.

### *Rain Water Supplies*

In addition to the water supply received from the public network, realized by means of – often elaborate – plumbing, rain water supplies were sometimes captured by means of basins and *nymphaea*. This practice is, for instance, attested at Sagalassos, where the 4<sup>th</sup> century baths (5b)

<sup>93</sup> Cf. Coulton 1987, 74.

<sup>94</sup> Cf. Coulton 1987, 73–74.

<sup>95</sup> Cf. Ortloff – Crouch 2001, 852–856. See also Thür 2006, 67–71; Wiplinger 2006b, 30.

<sup>96</sup> Cf. Hecht 1978, 32.

<sup>97</sup> Cf. Uytterhoeven – Martens 2008, 291. For the city's water supply: cf. Martens 2006.

<sup>98</sup> For the water supply system of Laodikeia: cf. Şimşek – Büyükkolancı 2006.

<sup>99</sup> Cf. *supra*, p. 313.

<sup>100</sup> Cf. Hewitt 2000, 77–78. 196–198, where she also discusses the link between public and private water networks in North Africa in general.

<sup>101</sup> Cf. Papaioannou 2007, 351. Cf. also Bonini 2006, 153–154 for the example of Dion in Macedonia.

were connected via a service corridor with a marble-clad, double-apsed *nymphaeum* (XIX) in the north-east corner of the peristyle courtyard (fig. 7). This *nymphaeum* was fed by rain water via four water pipes, incorporated in the four corners of the vault. In this way the *nymphaeum* did not only have an aesthetical function as eye-catcher on the *peristylum*, but also a utilitarian one as water depot for the bathrooms, adding to the public water supplies<sup>102</sup>.

Besides, as is clear from the well-developed late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D. bath building of ›Peristyle House VII‹ at Pergamon (4a), larger bath complexes could also possess their own real water reservoirs. The main water depot here was located north-west of the bath complex and – like the bathrooms themselves – cut in the bedrock. Given the large capacity of the reservoir (830–924 m<sup>3</sup>), it is not excluded that it also supplied other buildings. From the reservoir water was supplied to the bathtubs via division basins. Apart from this, the *frigidarium* had its own, smaller, water reservoir (capacity of ca. 2.50 m<sup>3</sup>), which was connected to the large water depot<sup>103</sup>. A separate reservoir (for rain water?) is also preserved near the bath complex of the villa on the Panayırdağ at Ephesos (10). Also this may have formed an important addition to the water supplies that were directly received from the public water network<sup>104</sup>.

With this practice of capturing rain water as a supplement to public water resources the private bathrooms of Asia Minor were in line with baths in houses elsewhere. The use of rain water and water from fountains has also been suggested for the private baths at Pompeii and North Africa, while in Greece private baths were equally supplied by various types of supplementary water sources<sup>105</sup>.

#### *Supply and Drainage Pipes and Channels within the Dwellings*

Although our current knowledge about the water circulation within the bath complexes themselves is rather limited at date, it is clear that basins and tubs were sometimes supplied by means of terracotta pipelines, which within the individual spaces gave out to smaller lead pipes bringing water to the final destination. This practice is for instance attested in the bath complex in ›Wohninheit 1‹ of ›Hanghaus 2‹ at Ephesos (3) and presumably also in the ›Urban Mansion‹ at Sagalassos (5)<sup>106</sup>. Alongside lead pipes, supply systems entirely made of terracotta pipes occurred, which was actually the common practice in the eastern Mediterranean<sup>107</sup>. Examples of this type of water supply pipes are attested in the bath of ›Peristyle House II‹ at Pergamon (11)<sup>108</sup>.

The evidence shows that waste water from the baths was discharged by means of outlets at the bottom of the built tubs that were connected with pipe systems ending up in the public sewers of the town. This was for instance the case in the ›Urban Mansion‹ at Sagalassos (5), where the masonry-built bathtub of the *caldarium* had a small terracotta outlet in its apse. By means of underground water pipes the waste water was led into a larger masonry-built channel in the

<sup>102</sup> Cf. Uytterhoeven – Martens 2008, 292.

<sup>103</sup> For the water system of this dwelling: cf. Wulf 1999, 94–95.

<sup>104</sup> Ortloff – Crouch 2001, 852–856 have shown that the residential quarters on the – lower located – western and south-western slopes of the Panayırdağ received their water supplies from the public Kaystros system.

<sup>105</sup> Pompeii: cf. de Haan 1996, 60–61. North Africa: cf. Hewitt 2000, 195–196. Greece: cf. Bonini 2006, 154–155.

<sup>106</sup> Ephesus: cf. Wiplinger, 2002a, 79 and 2002b, 155–166. Sagalassos: cf. Uytterhoeven – Martens 2008, 292.

<sup>107</sup> Cf. Jansen 2000, 119. 121. 123. For water pipe systems at Pompeii, where only a small number of houses had a pipe specifically supplying a private bath: cf. Jansen 2000, 115–116 and 2001.

<sup>108</sup> Cf. Pinkwart – Stammnitz 1984, 43.



peristyle courtyard area and via this way drained in a large public sewer in the west of the excavation area<sup>109</sup>. Waste water of ›Hanghaus 2‹ at Ephesos, including that of the private baths (e. g. the apsidal basin in ›Wohninheit 7‹ – 7), similarly ended up in an urban sewer system, which was located on the south-west side of the ›Kuretenstraße‹<sup>110</sup>. In the ›Triconch House‹ at Aphrodisias (17) water ran away via flower-shaped drains in the *opus sectile* floor of the *caldarium*. In some cases waste water drained from the baths was used to flush nearby-located toilets (cf. *infra*).

### Heating Infrastructure

The bath examples under discussion obviously show that a well-developed heating system formed a second essential element for a private bath.

#### *Hypocaust Systems*

Typical of the private bathrooms in Roman and late antique Asia Minor was the occurrence of a hypocaust system. With exception of the bath in the ›Attalos House‹ at Pergamon (9), even the most ›basic‹ bathing installation consisting of a one-room bath, such as the bath in ›Bau Z‹ at Pergamon (1), had a heated floor and a related *praefurnium*.

The heating process, which is also well-known from private baths elsewhere (e. g. Italy and North Africa<sup>111</sup>), started in the furnace (*praefurnium*). Examples have been excavated in Pergamon (›Bau Z‹ – 1; ›Peristyle House VII‹ – 4), Ephesos (›Hanghaus 2‹: ›Wohninheit 1‹ – 3; ›Wohninheit 7‹ – 7), Labraunda (›Tetraconch‹ – 13) and Antandros (›Terrace House‹ – 15). In the *praefurnium* charcoal or wood was fired up to very high temperatures<sup>112</sup>. From the furnace the hot air was circulated in between the – round (e. g. Erythrai – 2; Ephesos – 3, 6 and 7; Sagalassos – 5; Labraunda – 13) or rectangular (e. g. Laodikeia – 12) – piers of the hypocaust system. In accordance with Vitruvius' regulations these hypocaust piers were generally two feet high, *i. e.* ca. 0.60 m<sup>113</sup>, although deviations from this standard occurred. For instance, the *pilae* of the late 1<sup>st</sup>-early 2<sup>nd</sup> century bath of the ›Urban Mansion‹ at Sagalassos (5a) had a height of ca. 0.50–0.55 m. On the other hand, the *pilae* belonging to the rebuilt 4<sup>th</sup>–5<sup>th</sup> century bath (5b and c) must have been ca. 0.65–0.95 m high, as can be deduced from the mortar traces along the walls indicating the level of the floor that was later broken out<sup>114</sup>. The *pilae* of the original Trajanic *caldarium* in ›Wohninheit 1‹ of the Ephesian ›Hanghaus 1‹ (3a) were 0.64–0.67 m high<sup>115</sup>, while in the early 3<sup>rd</sup> century A. D. ›Peristyle House II‹ at Pergamon (11) the 4 × 3 hypocaust piers (*pilae*) in brick had a maximum height of only 0.20 m<sup>116</sup>.

From the hypocaust the hot air was sometimes further circulated in the bathing space by means of *tubuli* in the walls, as is evidenced in the bath complex of ›Peristyle House VII‹ at Pergamon (4a), in the original *caldarium* of ›Wohninheit 1‹ in the Ephesian ›Hanghaus 2‹ (3a), in the bath in the east portico of ›Wohnheit 6‹ (6), and in the eastern room of the bath of ›Wohnheit 7‹

<sup>109</sup> Cf. Uytterhoeven – Martens 2008, 295–296.

<sup>110</sup> Cf. Ortloff – Crouch 2001, 857.

<sup>111</sup> Pompeii: cf. de Haan 2005 and 2007, 126–131. North Africa: cf. Hewitt 2000, 189–194.

<sup>112</sup> For temperatures reached in hypocaust furnaces: cf. McParland *et al.* 2009.

<sup>113</sup> Cf. Vitr. 5.10.2: *altitudinem autem pilae habeant pedes duo*.

<sup>114</sup> Cf. Uytterhoeven – Martens 2008, 289.

<sup>115</sup> Cf. Rathmayr 2010a, 90.

<sup>116</sup> Cf. Pinkwart – Stammnitz 1984, 43.

(7). Terracotta wall spacer pins used to create hollow spaces for the circulation of hot air between the wall face and tiles attached against the wall, known for instance from the ›Southern Roman Villa with Mosaics‹ at Laodikeia (12), had the same function<sup>117</sup>.

Apart from the air in the bathing spaces the water of the baths was heated by means of the *praeefurnium* as well. As is also known from public bathing installations<sup>118</sup>, water for the warm baths was kept at temperature by means of a boiler. This is evidenced for the 3<sup>rd</sup> century bath in ›Wohneinheit 1‹ of ›Hanghaus 2‹ (3c).

### *Solar Energy*

In addition to the hypocaust system solar energy must have been used as a heating source as well, since several heated private bathrooms were arranged in the southern section of the dwelling or along an open courtyard, and were oriented towards the south and south-west. Such an orientation, attested for baths in Pergamon (›Peristyle House VII‹ – 4; ›Attalos House‹ – 9), Sagalassos (›Urban Mansion‹ – 5), Laodikeia (›Southern Roman Villa with Mosaics‹ – 12) and Antandros (›Terrace House‹ – 15), contributed to the heating of these spaces.

The orientation of these private baths follows Vitruvius' advice to orient baths and winter *triclinia* to the (south-)west in order to profit as much as possible from the warmth and light (6.4.1). Also Pliny mentions the orientation of his private baths towards the sun among the plus points of his villas (*Ep.* 1.3.1; 5.6.26). In Pompeii the same concerns seem to have defined the south(-west) orientation of several private bathrooms<sup>119</sup>, while the practice is also known from public bath buildings<sup>120</sup>.

The private bath complexes with south(-western) orientation mentioned above did not only profit from the sun as an important heating source for the warm bathrooms. The sun, which entered through windows giving out on the south or west, additionally played an important role for illuminating the spaces. That these windows sometimes additionally offered views on the surrounding landscape to the bathers is, for instance, mentioned by Pliny<sup>121</sup>.

### *Decoration of the Private Baths*

The private bath complexes under study attest that these installations were generally richly decorated. As is also archaeologically attested for other areas<sup>122</sup> and is also known from the written sources<sup>123</sup>, in particular, marble and coloured stone were extensively used and remained wide-spread decoration materials from the early Imperial Period into Late Antiquity.

<sup>117</sup> For terracotta spacer pins and *tubuli* as part of wall heating systems: cf. Nielsen 1990, 14–15; Yegül 1992, 363–365 and 2010, 87–89. For (public) baths in Asia Minor: cf. also Farrington – Coulton 1990; Koçyiğit 2006; Gülşen 2007.

<sup>118</sup> For the functioning of boilers: cf. Nielsen 1990, 16; Yegül 1992, 373–374 and 2010, 91–92; Manderscheid 1996, 112.

<sup>119</sup> Cf. de Haan 2007, 131–132.

<sup>120</sup> Cf. Yegül 1992, 382–383 and 2010, 81; Ring 1996.

<sup>121</sup> *Ep.* 2.17.11 (*calida piscine mirifica, ex qua natantes mare adspiciunt*: »the heated swimming-bath, which is much admired and from which swimmers can see the sea« – translation taken from Radice 1969). See also Yegül 1992, 382. For the role of windows in public baths: cf. Broise 1991.

<sup>122</sup> E.g. for the use of marble in the private baths of North Africa: cf. Hewitt 2000, 206–209.

<sup>123</sup> See e. g. Martialis' description of the bath of Etruscus, which was clad with Laconian, Phrygian and Libyan marble and with onyx (*Ep.* 2.42.11–15). In the 5<sup>th</sup> century A. D. Sidonius Apollinaris mentioned marble from Paros, Carystos, Prokonessos, Phrygia, Numidia, Sparta and Ethiopia as marble types that were frequently applied in private baths, but were lacking in his – sober – bathing installation (*Ep.* 2.2.7).

Marble *crustae* were applied in wall niches, such as in the *caldarium* of ›Wohneinheit 1‹ in the Ephesian ›Hanghaus 2‹ (3) and in the *apodyterium* of the ›Terrace House‹ at Antandros (15), and decorated the bathtubs and steps leading to the basins (e. g. the bath in ›Bau Z‹ at Pergamon – 1; the *caldarium* in the ›Urban Mansion‹ of Sagalassos – 5; the basin in ›Wohneinheit 7‹ of the Ephesian ›Hanghaus 2‹ – 7). Besides, the walls of many bathrooms were clad with revetment in marble and coloured stone. This was for instance the case in the bath complex that was installed in the eastern portico of ›Wohneinheit 6‹ of ›Hanghaus 2‹ at Ephesos (6), in the bath of the ›Southern Roman Villa with Mosaics‹ at Laodikeia (12) and that in the ›Triconch House‹ at Aphrodisias (17). Within this context it can be added that apart from the archaeological evidence, the application of (re-used) marble in late antique private baths of Asia Minor is also literarily attested. In the late 4<sup>th</sup>–early 5<sup>th</sup> century A. D. Antoninos, the bishop of Ephesos, even decorated his private bath with marble that he had stripped from the baptistery entrance of one of the churches of the city (Palladios, Dial. De vita Chrysost. 13, 163–165<sup>124</sup>).

Sometimes wall painting imitations of *crustae* were applied instead of real marble plates, as was the case in the *caldarium* of ›Wohneinheit 1‹ of the Ephesian ›Hanghaus 1‹. Here the original wall *crustae* (3a) were replaced by – cheaper – stucco paintings imitating marble *crustae* during the 3<sup>rd</sup> century rebuilding phase (3c). In the bath of the ›Terrace House‹ at Antandros (15) fragmentary wall paintings representing an architectural frame of imitation marble plates separated by Ionian columns, were found *in situ* on the southern wall of the *apodyterium*. Also the *tepidarium* of this bath complex had wall paintings. In general, wall painting was also outside Asia Minor an often applied decoration technique for private baths<sup>125</sup>.

Wall paintings could also be combined with marble and coloured stone. This is illustrated by the *caldarium* in the ›Urban Mansion‹ of Sagalassos (5). The lower part of the walls of this space was covered with marble *crustae*, whereas the upper part of the wall elevations had wall paintings. Besides, in some baths glass mosaics were applied together with wall paintings, as is attested in the *frigidarium*(?) of the bath on the Panayırdağ at Ephesos (10).

For floors marble and coloured stone types were also commonly used. Negative traces in the mortar floor of the *tepidarium* of the ›Terrace House‹ at Antandros (15) indicate that this lukewarm bath had an *opus sectile* floor. Similarly, the *caldarium* in the ›Triconch House‹ at Aphrodisias (17) was paved with *opus sectile*.

In some baths mosaic floors in *opus tessellatum* occurred instead of marble pavements, in line with private baths elsewhere<sup>126</sup>. Whereas the mosaic floors of the bath in the ›Urban Mansion‹ at Sagalassos (5), which stayed in use from the late 1<sup>st</sup>–early 2<sup>nd</sup> century phase into Late Antiquity, were entirely geometric, those of Antandros (15) combined geometric with figurative motifs (e. g. *apodyterium*).

In addition to wall and floor decoration moveable decorative elements must have added to the luxurious environment offered to bathers. These may have included portable basins in marble or precious materials, and statuary. Statues are, for instance epigraphically attested, in a private bath at Timgad in North Africa<sup>127</sup>. However, in the bathrooms that have been investigated in

<sup>124</sup> Edition by Malingrey – Leclercq 1988.

<sup>125</sup> For wall paintings in private baths at Pompeii: cf. de Haan 1993. For descriptions of figurative wall paintings in 5<sup>th</sup> century private bath contexts: cf. Sid. Apoll., *Ep.* 2.2.6.

<sup>126</sup> North Africa: cf. Hewitt 2000, 209–230. See also Manderscheid 1994.

<sup>127</sup> Cf. Hewitt 2000, 205–206.

Asia Minor thus far, similar moveable objects have not (yet) been revealed, partly because several baths lost their bathing function during the last occupation phase. Consequently, only literary descriptions and depictions, as well as examples from baths in other areas can currently supplement the available evidence and give us an idea how the entire bathing setting looked like.

#### LOCATION OF THE BATH COMPLEXES WITHIN THE HOUSE CONTEXTS

As is evidenced by the currently available bath examples, private bathrooms were frequently located in the service area of the house. For instance, the bathing installation of ›Wohneinheit 1‹ in ›Hanghaus 2‹ at Ephesos (3) was located close to the service spaces including the kitchen (area of Rooms SR 5a, b and c and SR 8) (*fig. 2*)<sup>128</sup>. A location near spaces with a service function was a logical and practical choice, because in this way water and heating facilities for bathing and cooking could be shared and these activities were concentrated in one particular section of the dwelling.

A similar practical concern seems to have been a predominant factor for the installation of latrines in the kitchen-bath area, which allowed flushing the toilet with waste water from the baths and the kitchen. This is illustrated by the toilet in Room 1 of ›Wohneinheit 4‹ of the Ephesian ›Hanghaus 2‹, which was also accessible for users from ›Wohneinheit 1‹. A second latrine (SR 2a) may have been installed west of vaulted Space C in the southern part of the dwelling during Building Phase 2 of the bath of ›Wohneinheit 1‹. Additionally, in Building Phase 4 an extra toilet (Space SR 1a) was constructed in the close vicinity of the baths under the staircase in the vestibule. This toilet was directly connected with the channel underneath ›Stiegengasse 1‹<sup>129</sup>. In the ›Urban Mansion‹ at Sagalassos (5), as well as in the ›Terrace House‹ at Antandros (15), the bath and the kitchen/service spaces were equally grouped together (*fig. 7 and 15*), while in both dwellings also a toilet was installed in the same area. In the Sagalassos residence the entire service zone was provided with a sophisticated system of water pipes and masonry-built discharge channels that ended in a public sewer. The kitchen, bath and toilet waste was directly discharged to this drainage system<sup>130</sup>. A latrine was also located close to the bathing spaces in the ›Triconch House‹ at Aphrodisias (17)<sup>131</sup>.

The possibility of sharing common heating and water facilities, which had already been decisive for the position of private baths in Hellenistic Asia Minor, thus continued to be an important factor in the Roman and late antique periods.

Vitruvius had the same practical concerns in mind when he advised to place baths and kitchens together in farms (6.6.2). In line with this recommendation many examples in the cities of the Vesuvius area, Rome and the western provinces (e. g. North Africa) evidence that also elsewhere

<sup>128</sup> Cf. Wiplinger 1997, 80 and 2002a, 79; Rathmayr 2010a, 91–92. 97 and 2010b, 381. For kitchens in Hanghaus 2: cf. also Rembart 2007.

<sup>129</sup> Cf. Rathmayr 2010a, 91. 93. 96 and 2010b, 378. 382.

<sup>130</sup> Sagalassos: Uytterhoeven – Martens 2008, 290. 295–296. Antandros: Polat – Polat 2006, 91; Polat *et al.* 2007, 45–46.

<sup>131</sup> Cf. Erim 1986, 72.

Roman and late antique private bathrooms tended to be built close to the kitchen and latrines because of the same practical reasons<sup>132</sup>.

Another important characteristic of the private baths of Asia Minor, which was valid from the Early Imperial Period into Late Antiquity, is that they were generally located in easily accessible areas, *i. e.* in the entrance zone of the dwelling, near regulating spaces, such as the peristyle courtyard, and/or in the vicinity of the (private) reception and dining spaces.

For instance, the 1<sup>st</sup> century one-room bath of ›Bau Z‹ at Pergamon (1) was installed in the immediate entrance area of the house and entered from the ›atrium‹. The bath in ›Wohneinheit 1‹ in the Ephesian ›Hanghaus 2‹ (3) was, during Building Phase 2, easily reachable from the representative part of the dwelling via a regulating space (SR 7) that was entered from reception/dining space SR 1/6. On the other hand, in Building Phase 4 the bath could be more easily accessed from the entrance area, *i. e.* via the vestibule of the house (Space 1) and Space SR 7 preceding the bath<sup>133</sup>. In the case of the bath in ›Wohneinheit 6‹ (6) a connection existed between the representative ›Marmorsaal‹, which was used for banquets, and the bathrooms<sup>134</sup>.

The bath complexes in the ›Urban Mansion‹ at Sagalassos (5), in ›Wohneinheit 7‹ of ›Hanghaus 2‹ (7), in ›Peristyle House II‹ at Pergamon (11) and in the ›Triconch House‹ at Aphrodisias (17) all gave out on the central peristyle courtyard and could, consequently, easily be reached. When the Sagalassos bathrooms were incorporated in a large elite residence in the late 4<sup>th</sup>–early 5<sup>th</sup> century A.D., they became part of the southern, more private wing of the building, including dining spaces from where the baths were easily reachable. Similarly, the baths of the ›Terrace House‹ of Antandros (15) could be entered from the wing with reception rooms. Finally, a close location between reception area and baths was also established in the ›Byzantine Palace‹ at Ephesos (19).

The evidence thus suggests that the location of the private bathrooms was not only dictated by practical issues, such as the availability of water and heating installations that could be used for both bath and kitchen, but that practical aspects were combined with complementary representative concerns. Here again the private baths of Asia Minor followed general tendencies in the Roman and late antique World<sup>135</sup>, which are evidenced both literary and archaeologically. Although Vitruvius listed private baths – together with bedrooms and dining rooms – among the ›private‹ spaces of the houses that were reserved for the family<sup>136</sup>, it is clear from other written sources that baths were also used by other persons than the household<sup>137</sup>. The high degree of accessibility of the archaeologically attested private bathrooms within the dwellings supports

<sup>132</sup> Cf. also Salza Prina Ricotti 1978–1980, 256; de Haan 2001, 42; Rembart 2007; Schmölder-Veit 2009, 134. For private toilets at Pompeii: cf. Jansen 2007, 262–263. For North Africa, where latrines were sometimes associated with the baths: cf. Hewitt 2000, 187–189. For Tunisia in particular: cf. Ghiotto 2003, 226. Private baths in Greece tended to be inserted in more remote areas of the dwellings, but they do not seem to have had an explicit link with the kitchen area: cf. Bonini 2006, 150.

<sup>133</sup> Cf. Rathmayr 2010a, 94, 97–98 and 2010b, 379, 381–382.

<sup>134</sup> Cf. Swientek 2007.

<sup>135</sup> Cf. Ellis 2000, 41, 161.

<sup>136</sup> Cf. Vitr. 6.5.1: *Namque ex his quae propria sunt, in ea non est potestas omnibus intro eundi nisi invitatis, quemadmodum sunt cubicula, triclinia, balneae ceteraque* (›For into the private rooms no one can come uninvited, such as the bedrooms, dining-rooms, baths and other apartments which have similar purposes‹). Taken from Granger 2004. For the distinction between private and public in the Roman domus: cf. e. g. Wallace-Hadrill 1994 (esp. Part I); Grahame 1997; Riggsby 1997; Cooper 2007, 17–31. For Late Antiquity: cf. Özgenel 2007.

<sup>137</sup> For references to the written evidence: cf. *supra*, n. 2.

this picture of baths to which guests were invited. For instance, several of the baths in Pompeian houses were located at the peristyle courtyard and close to *triclinia*, which made them here also easily accessible for guests.

Within the framework of the reception of guests elaborate bathing spaces could thus – next to impressive reception spaces and rich decorative elements including fountains, sculptures, wall paintings and mosaic floors – form a tool for self-representation and a status symbol of the house owner, and allowed him to receive selected guests in a relaxing imposing context<sup>138</sup>. Bathing in a private context consequently did not only have the advantage of escaping the large masses who frequented the public bath buildings in the cities<sup>139</sup>, but also allowed showing off with the luxurious architecture, decoration and sculptural programs of the private baths.

#### ROMAN AND LATE ANTIQUE PRIVATE BATHS IN ASIA MINOR: BATHING IN A ›WESTERN STYLE‹

##### *Hellenistic versus ›Italian-Inspired‹ Roman and Late Antique Private Bathing Installations*

As is obvious from the above-mentioned overview, the private bathing installations in Roman and late antique Asia Minor were clearly different from their Hellenistic precursors. Not only did the plans of the bathrooms largely develop, evolving from the simple Hellenistic bathing spaces to elaborate sequences of specialised bathrooms, but also the baths themselves took new forms. As far as retraceable at date, the Hellenistic hip baths and bathtubs, such as those at Priene, Tarsos and Nagidos, were from the Early Imperial Period onwards replaced by built basins, sometimes accessible by means of small steps (e. g. bath in the ›Attalos House‹ at Pergamon – 9; baths in ›Wohneinheiten 1, 6 and 7‹ of the Ephesian ›Hanghaus 2‹ – 3, 6 and 7; *caldarium* in the ›Urban Mansion‹ at Sagalassos – 5; *caldarium* in the ›Triconch House‹ at Aphrodisias – 17) that could be supplemented with portable basins. Instead of single bathtubs or hipbaths, specialised spaces including dressing rooms, baths with varying temperatures and sweat baths, which allowed common bathing sessions in a private context, appeared and gradually developed into larger complexes.

Besides, from the Early Imperial Period onwards the heating and water infrastructure of the baths became much more sophisticated than had been the case before. Hypocaust systems and related *praefurnia* seem to have become *conditiones qua non*. The water supply of the bath was largely depending on the public urban system that got gradually more and more extended, particularly from the Augustan Period onwards, and was supplemented by local water capture by means of reservoirs (e. g. the elaborate system connected with ›Peristyle House VII‹ at Pergamon – 4; the bath of the villa on the Panayırdağ at Ephesos – 10) and – sometimes luxurious – *nymphaea* (e. g. ›Urban Mansion‹ of Sagalassos – 5).

Finally, whereas the Hellenistic baths had primarily been functional installations and, accordingly, had a very sober interior with hardly any decorative elements, the Roman and late

<sup>138</sup> Pompeii: cf. Dickmann 1999a, 666 and 1999b, 264–267; de Haan 2001, 42 and 2007, 134–136 (with references to literary attestations of receiving guests in private baths). See also Rathmayr 2010b, 378–379. For the role of ›reception‹ within the context of the Roman house: cf. e. g. George 2003, 189–192. For the aspect of self-representation and status expression in the Roman dwelling in general: cf. e. g. Cooper 2007, esp. 9–17.

<sup>139</sup> As Petronius let Trimalchio formulate it: *nam nihil melius esse dicebat quam sine turba lavari* (›he declared that there was nothing nicer than washing out of a crowd‹ – *Sat.* 73). Taken from Warmington 1997.

antique baths got an additional ›representative‹ function, both in line with and adding to the growing impressive character of the Roman dwelling<sup>140</sup>. In accordance with what ancient authors generally wrote about the luxurious appearance of private baths, rich decoration programmes, including marble wall revetment, wall paintings, wall mosaics, *opus sectile* and *opus tessellatum* floors, were deliberately used to create an agreeable and impressive atmosphere for the bathers, including members of the household and guests. The accessibility of the baths for invited guests was additionally underscored by their location near entrance and reception spaces.

The present data suggest that the private bathing installations of Roman and late antique Asia Minor were incontestably inspired by models occurring in Italy<sup>141</sup>. In the Vesuvian cities, such as Pompeii, and at Rome private baths provided with hypocaust systems and specialised spaces with a clearly defined function and controlled temperature had first appeared from the 1<sup>st</sup> half of the 1<sup>st</sup> century B. C. onwards<sup>142</sup>. When the first private bathrooms under Roman rule started to be integrated in house contexts in Asia Minor, apparently from the early 1<sup>st</sup> century A. D. onwards and thus contemporaneously with the construction of the first public baths in the area<sup>143</sup>, they corresponded to the ›Italian‹ scheme of bath complex that had been developed thus far in Italy. Once introduced, the further evolution of the private baths in Asia Minor largely followed the development lines in Italy. Just like the Augustan aqueduct at Pompeii created new possibilities for house owners to get access to the public water supply and embellish their dwellings with baths, fountains and other water-related structures, the contemporaneous construction of aqueducts in the cities of Asia Minor and other areas of the East led to the development of progressively extending private bath spaces and water facilities. The first, rather modest examples, such as the early 1<sup>st</sup> century A. D. bath in ›Bau Z‹ at Pergamon (1), subsequently formed the basis for further evolutions towards large and specialised bathing installations that – particularly in Late Antiquity – would take impressive shapes. These ›Italian-inspired‹ bathrooms did not only occur in newly built houses, such as the early Imperial ›Hanghaus 2‹ at Ephesos (3, 6 and 7), but were from the 1<sup>st</sup> century A. D. also incorporated in already existing peristyle houses following the Hellenistic house tradition (e. g. ›Bau Z‹ and the ›Attalos House‹ at Pergamon – 1).

The close link between private baths in Italy and those in the provinces is also observable in Roman Greece, where private bathing installations with sophisticated heating systems, fixed basins and well-developed water supply systems, reflecting the contemporaneous development of the ›Italian‹ bath, equally started to appear from the 1<sup>st</sup> century A. D. onwards<sup>144</sup>.

Also in other areas of the Roman Empire the private baths integrated at the moment of their first appearance architectural and infrastructural elements that followed the evolutions of the already existing and earlier developed Italian examples. For instance, the (early) 1<sup>st</sup> century A. D. private bath at Cirta in North Africa was undoubtedly influenced by Late Republican

<sup>140</sup> For the late antique elite house: cf. *supra*, p. 312.

<sup>141</sup> Moreover, not only the type of the bath, but also the configuration of *atrium*-bath occurring in ›Bau Z‹ at Pergamon has explicitly been linked with similar combinations in *domus* and *villae* in Italy: cf. Radt 1993, 367; Wulf 1999, 100.

<sup>142</sup> At Pompeii the earliest example of a specialized private bath appeared in the 1<sup>st</sup> half of the 1<sup>st</sup> century B. C. in the ›casa del Labirinto‹: cf. Dickmann 1999a, 663. See also de Haan 2001, 41 and 46, where she points out that most Pompeian private baths were built between 40 and 20 B. C.

<sup>143</sup> The Baths of Cn. Vergilius Capito at Miletus, built under the reign of Claudius (41–54 A. D.) can be considered the first axially built bath-gymnasium in Asia Minor: cf. Steskal 2007, 117.

<sup>144</sup> Cf. Bonini 2006, 145. 150: »in conformità alla cronologia non anteriore al I sec. D. C. gli esempi noti in Grecia ben s' inseriscono in uno stadio avanzato dello sviluppo delle terme private.«

and Early Imperial Italian examples<sup>145</sup>. It cannot be a coincidence that, when from the early 2<sup>nd</sup> century A. D. onwards private bathing installations started to appear on a larger scale in houses of Northern Africa, these were all in line of the more developed, extended types that existed in Italy at that moment<sup>146</sup>.

Since in all these areas the first ›Roman‹ private baths reflected the contemporaneous development stage in Italy, they must have been directly influenced by ›Italian-style‹ examples and have been introduced as an ›Italian‹ architectural feature.

### *The Imperial Period: The Choice of an ›Italian-Style‹ Bath*

Within this context the question of the identity of the house owners with private baths of the ›Roman‹ type in Asia Minor could be raised<sup>147</sup>. Who were the people who started – apparently from the 1<sup>st</sup> century A. D. onwards – to provide their private dwellings with bathrooms in the ›Italian-style‹, which clearly differed from the baths typical of the preceding Hellenistic Period?

The architectural characteristics of the private bath complexes of Roman and late antique Asia Minor, as well as their rich decorative schemes and sophisticated water and heating systems make clear that they appeared in an élite – or at the least higher middle class – context. In general, the dwellings provided with baths were richly decorated houses, frequently peristyle dwellings, which were often provided with reception spaces. In these dwellings marble and coloured stone, mosaic pavements and wall paintings were largely applied and water-related features, such as *nymphaea*, were integrated within a luxury framework (e. g. ›Hanghaus 2‹ at Ephesos – 3, 6 and 7; the ›Attalos House‹ at Pergamon – 9, the ›Urban Mansion‹ at Sagalassos – 5; the ›Terrace House‹ at Antandros – 15).

Unfortunately, we do not have much detailed information about the precise identity of the élite house owners who installed private bathing facilities in their dwellings. That at least some of the private bath owners were members of the – politically active – urban upper class is evidenced in ›Hanghaus 2‹ at Ephesos, the capital of the *Provincia Asia*. In this luxurious complex, numerous graffiti and inscriptions, in Greek and Latin, reveal upon the identity of the inhabitants of the peristyle dwellings and even offer names, giving thus a ›profile‹ of house owners who chose to provide their dwellings with ›Italian-style‹ baths. For instance, the name of C. Vibanius Salutaris, who lived in the late 1<sup>st</sup>–early 2<sup>nd</sup> century A. D., occurs in a graffiti on the south wall of the latrine (SR 29) of ›Wohneinheit 2‹. A print of a ring with gem on the wall of Room 26 in the same dwelling possibly refers to the house owner who was responsible for repairs and rebuilding in the 2<sup>nd</sup> quarter of the 3<sup>rd</sup> century A. D.<sup>148</sup>. Besides, an inscription on the back wall of the fountain at the south side of the *peristylum* in ›Wohneinheit 6‹ mentions the Dionysos priest C. Flavius Furius Aptus, who belonged to an important, well-known family at Ephesos. His interventions during Building Phase 2 (Mid 2<sup>nd</sup> century A. D.) transformed the house in a

<sup>145</sup> Cf. Hewitt 2000, 121–124. 201–202. 261–262, where she states that: »The example is thus important evidence for the introduction of Roman baths and bathing practice to North Africa (...) it is apparent that the bathing culture in these Roman provinces is adopted directly from the Roman model, and that it shows a demonstrable break from the earlier Punic bathing tradition.« Other examples are Herod's private baths that have also been considered an expression of ›Romanization‹: cf. Regev 2010, 206–212.

<sup>146</sup> Cf. Ghiotto 2007, 223–224. 227.

<sup>147</sup> For the issue of ownership of houses with private baths in North Africa: cf. Hewitt 2000, 231–240.

<sup>148</sup> Cf. Taeuber 2005; Zimmermann 2005, esp. 381; Thür 2007; Zimmermann – Ladstätter 2010, 54.



luxurious peristyle dwelling with increased reception facilities adapted for a large number of guests, including a large dining hall (the so-called ›Marmorsaal‹), which was linked with the private bathrooms, and a *basilica privata*. The *praenomen Gaius* mentioned in the epigram on one of the statue bases that were symmetrically positioned flanking the *basilica*, can also be linked with this prominent inhabitant of Ephesos<sup>149</sup>.

The examples from Ephesos make it acceptable that in the (Early) Imperial Period private bath rooms showing large similarities with ›Italian‹ ones concerning their ground plan, infrastructure and rich decoration, were built by members of the indigenous élite. Besides, it can be assumed that also Italians from the West, who were present in the area, may have preferred to build their private dwellings according to vogues of their home country<sup>150</sup>. Similar presumptions have been made for other regions of the Roman Empire, including Greece<sup>151</sup>. The incorporation of ›westernized‹ private bath rooms may thus have been a way of expressing one's belonging to or – at least – liking of a ›western‹ élite lifestyle, current fashion trends and the associated idea of luxury. In that sense private bath complexes of the ›Italian/Roman type‹ could be considered indicators for a ›Roman/Italian(-inspired)‹ lifestyle, like the occurrence of the public bath-*gymnasium* in the eastern provinces, as well as the spread of public latrines, have often been interpreted as signs of ›Romanization‹ or manifestations of an ›Imperial Culture‹<sup>152</sup>.

However, not all members of the local and/or ›Italian‹ upper and higher middle classes in Asia Minor disposed over their own bathing infrastructure. In cities where a larger number of complete Roman houses have been excavated, such as at Pergamon and Ephesos, élite dwellings with private bath facilities are clearly less represented in the archaeological record than comparable houses without bathing spaces, which suggests that the inhabitants of these houses visited the public bath buildings in the neighbourhood<sup>153</sup>. Consequently, having a private bath seems to have continued to be exceptional, as it had been in the Hellenistic East<sup>154</sup>. The same seems to have been true for Italy itself, as is illustrated by Pompeii. Between the 2<sup>nd</sup> century B. C. and 1<sup>st</sup> century A. D. only about 7.5 % of the dwellings here were provided with a private bathing installation<sup>155</sup>. Similar observations have been made for other areas of the Empire, such as for 2<sup>nd</sup> century A. D. Tunisia, where only 5.9 % of the investigated dwellings had bath rooms<sup>156</sup>. On the other hand, in Greece 7.4 % of the 1<sup>st</sup> to 3<sup>rd</sup> century A. D. dwellings known thus far were provided with baths,

<sup>149</sup> For C. Flavius Furius Aptus and his building interventions in ›Living Unit 6‹ of ›Hanghaus 2‹ at Ephesos: cf. esp. Rathmayr 2009. Cf. also Knibbe – İplikçiöğlü 1981–1982, 132–134; Thür 2002, 62–63; 2004, 227 and 2007; Zimmermann – Ladstätter 2010, 54. 71. 79.

<sup>150</sup> For the presence of Italians in Asia Minor, particularly at Ephesos: cf. Kirbihler 2007.

<sup>151</sup> For this aspect with regard to houses in Roman Greece: cf. Papaioannou 2010, 98–101, who ascribes an important role to Roman aristocrats, including officials and administrators, Italian *negotiatores* and Roman veterans and colonists, and to members of the local Greek upper class.

<sup>152</sup> See e. g. Ellis 2000, 160: »Baths are a definite indicator of Romanisation. The habit of bathing, especially socially or when conducting business, was quintessentially Roman.« For the place taken by public bath buildings within the ›Romanisation debat‹: cf. e. g. Steskal 2007, 116. For Late Hellenistic baths in Palestine as possible elements of ›acculturation‹ between local and ›Italian‹ traditions: cf. Small 1987. For the introduction of private baths in Imperial Britain as a sign of ›adaption of a Roman lifestyle‹: cf. Ellis 1995, 168–169. For *latrinae* as an expression of ›Romanisation‹: cf. Neudecker 1994, 133–134.

<sup>153</sup> Pergamon: cf. Wulf 1999, 101–102. ›Hanghaus 2‹ at Ephesos: cf. Thür 2004, 231 and 2005, 5.

<sup>154</sup> Cf. Ginouvès 1962, 175; Trümper 2010, 543–546.

<sup>155</sup> Cf. de Haan 2001, 41. Most examples date between the 1<sup>st</sup> century B. C. and the 1<sup>st</sup> century A. D.

<sup>156</sup> For late antique Africa: cf. Bowes 2010, 52. 54.

while the number increased up to 18.4 % in Late Antiquity<sup>157</sup>. Although these figures currently only have an indicative value, since not all private houses have been investigated in these areas, the limited number of private bathrooms and private water features in general that have thus far been encountered in private dwellings all over the Empire, suggests that having access to the public water system was an expensive privilege for a limited, rich section of the population<sup>158</sup>. Consequently, apart from the rich decorative programmes and expensive materials applied in the private baths, their exceptional character *in se* must already have added an extra element of luxury to the houses, surpassing the purely utilitarian function of the baths, and reflected the position and importance of the house owner<sup>159</sup>.

### *Late Antiquity: The Climax of Private Baths and Their Final Use*

#### Late Antique Owners of Private Baths

In the late antique period the use of public water supplies remained restricted to a limited number of private dwellings and was subjected to strict controls and regulations, for instance concerning the dimensions of water pipes. This is clearly illustrated by the legislative sources that have been preserved from that time and especially concern Constantinople and Rome<sup>160</sup>. Nevertheless, in comparison to the preceding period, extended private bath suites seem to have become a more or less fixed architectural feature in late antique elite houses, since most upper class dwellings known in Asia Minor for this period are included in our overview of dwellings with baths (e. g. ›Urban Mansion‹ at Sagalassos – 5a–b; ›Terrace House‹ at Antandros – 15; ›Triconch House‹ at Aphrodisias – 17; ›House on the Lycian Acropolis‹ at Xanthos – 18; ›Byzantine Palace‹ at Ephesos – 19). Similarly, also in other areas of the West and East private bathrooms became apparently a standard feature of the late antique urban elite residence<sup>161</sup>. As mentioned above<sup>162</sup> this evolution can be understood within the context of the growing role of the private elite house as ›showcase‹ of wealth and power and a means of impression and self-representation of the house owner. Within this framework private baths as places for receiving and imposing guests took an important role<sup>163</sup>, in spite of negative reactions of some (Christian) authors towards ›mixed bathing‹ and the luxury of baths<sup>164</sup>.

<sup>157</sup> Cf. Bonini 2006, 151.

<sup>158</sup> Cf. also Dickmann 1999a, 663–666; Papi 1999. For private access to the public water network, limited to wealthy city dwellers; cf. also Jansen 2000, 122–123. Sometimes water was illegally tapped from the public network, as happened e. g. at Ephesos: cf. Scherrer 2006, 54.

<sup>159</sup> Similarly for Pompeii: cf. de Haan 1996, 59; Dickmann 1999a, 664, 666; Papi 1999, 702; Wilson 2008, 304. For the luxurious and utilitarian role of water, see also Koloski-Ostrow 2001a.

<sup>160</sup> Cf. Baldini Lippolis 2007, 227–228.

<sup>161</sup> Cf. Brands – Rutgers 1999, 884; Hirschfeld 1999a, 261 and 1999b, 500; Kleinbauer 1999a, 313 and 1999b, 628; Maguire 1999, 241. See also the definition of the late antique elite house in Bowes 2010, 17: »Thus, ›elite houses‹ are considered to be any urban *domus* or rural villa with luxury provisions, typically considered mosaic floors, sculpture, painting or other decoration, bath suites and/or reception spaces.«

<sup>162</sup> Cf. *supra*, 312.

<sup>163</sup> Cf. Ellis 1991a; Scott 2004; Uytterhoeven 2007c.

<sup>164</sup> Cf. Dunbabin 1989, 6–7 and 2003, 460–461; Nielsen 1990, 147–148; Kleinbauer 1999a, 312–313; Yegül 1999, 338 and 2003, 57–58; Hewitt 2000, 246–248. See also Sidonius Apollinarius who was proud to have a very sober bath (*Ep.* 2.2.7): cf. *supra*, n. 123.

In order to get an image of the élite house owners of late antique Asia Minor, it is worth having a look to a 5<sup>th</sup> century urban dwelling at Halikarnassos<sup>165</sup>. Although no bath complex has been identified in this – only partly investigated – building thus far, the mansion can count as a nice illustration of a ›palace-like‹ high society residence characterized by elaborate architectural shapes, reception facilities and rich decoration (esp. mosaic floors). The dwelling is particularly interesting because the house owner (or builder) is known by name and the decorative programme of the residence allows us to catch a glimpse of his background and élite lifestyle. A mosaic poem laid out in front of the apse of one of the reception rooms attests how a certain Charidemos rebuilt and refurbished the residence in the 5<sup>th</sup> century A. D. The fact that the verses show close resemblance with the late 4<sup>th</sup>–early 5<sup>th</sup> century A. D. *Dionysiaca* of the poet Nonnos, has been interpreted as an illustration of the house owner's literacy and, consequently, of his high status. Moreover, motifs on other mosaics in the house, such as the personifications of Halikarnassos, Beirut and Alexandria, might refer to the hometown of the house owner (Halikarnassos), his education in law (at Beirut) and his link with another important study centre of the time (Alexandria), underscoring thus again his high rank<sup>166</sup>. Similarities between the Halikarnassos dwelling and other contemporaneous urban élite dwellings typified by comparable architectural and decorative characteristics, as well as attestations in the written sources, suggest that aristocrats with an élite profile similar to that of Charidemos lived in the residences in which private baths have been excavated.

#### Final Use of the Private Baths

However, the private baths in the élite houses of Asia Minor seem to have gradually lost their luxurious character and/or their bathing function from the late 5<sup>th</sup>–6<sup>th</sup> century A. D. onwards. In general, in this time élite complexes started to undergo significant changes, including processes of subdivision and ›ruralisation‹, which led to a lowering of the luxurious lifestyle<sup>167</sup>. In line with these evolutions also private bathrooms seem to have been given up and transformed into spaces with other functions, such as storage rooms, workshops and spaces related to agricultural activities. This is for instance the case with the ›Tetraconch‹ of Labraunda (13), which got out of use as a heated bath in the late 5<sup>th</sup>–early 6<sup>th</sup> century A. D., and the bath in the ›Southern Roman Villa with Mosaics‹ at Laodikeia (12), which was somewhere in the 5<sup>th</sup> century A. D. transformed into a glass workshop. On the other hand, the reduction of the bath complex of the ›Urban Mansion‹ at Sagalassos (5d) from four to two rooms, at the latest in the 2<sup>nd</sup> half of the 6<sup>th</sup> century A. D., when other parts of the residence started to get a storage or rural character (e. g. *tepidarium* XV got a fire place/cooking installation in its south-western corner)<sup>168</sup>, illustrates how these transformation processes evolved sometimes very gradually and could be limited to some areas of the buildings. Similarly, the private bath in the ›Terrace House‹ at Antandros (15) underwent a late rebuilding phase, resulting in a bath with reduced dimensions.

<sup>165</sup> For this dwelling: cf. Newton 1862, 280–310; Isager 1995 and 1997; Poulsen 1995, 1997a and 1997b.

<sup>166</sup> For the inscription: cf. Isager 1995, 210. 213; Isager 1997, 24–26. For the city personifications: cf. Poulsen 1995, 203 and 1997a; Ellis 2004, 42. See also Uytterhoeven 2009, 327.

<sup>167</sup> Cf. e. g. Ellis 1988 and 2004, esp. 47–50.

<sup>168</sup> For this evolution in the ›Urban Mansion‹: cf. e. g. Putzeys *et al.* 2004; Waelkens *et al.* 2007; Uytterhoeven *et al.* in press a and in press b.

Although it is at present difficult to understand which specific factors were exactly at the basis of these fundamental changes, which were certainly interwoven with general evolutions on the urban level<sup>169</sup>, it is clear that several of the late antique residences continued being occupied into the 7<sup>th</sup> century, but that this occupation was of a totally other kind than that of the ›flourishing‹ 4<sup>th</sup> and 5<sup>th</sup> centuries. Within this new type of housing the luxurious private baths of the previous centuries and the related concepts of reception and self-representation were no longer appropriate.

### CONCLUSION

In summary, it should be kept in mind that the overview of private bath complexes in the élite dwellings of Roman and late antique Asia Minor presented above is a preliminary one. Private houses of these periods are currently still very badly known *and* published, and the evidence for private bathing installations in the dwellings is even more limited.

As a consequence, the current evidence only allows getting a rather general idea about the architecture, infrastructure and decoration of the private baths in Asia Minor between the Early Roman and late antique periods. Nevertheless, the study of the currently available data reveals some general developments.

In spite of their large variety, the examples of private bath complexes in Asia Minor dating to the Roman and late antique periods illustrate that certain tendencies existed. In the early 1<sup>st</sup> century A.D. fixed bathing suites, decorated with marble, and provided with hypocaust systems with *praeefurnium* and sophisticated water supply and drainage systems, connected with the public infrastructure, seem to have appeared in the house contexts of Asia Minor. These baths apparently took over the bath function of the Hellenistic bathtubs or hip baths, although these older bathing types may sometimes have stayed in use into the Imperial Period, as is for instance attested for other areas of the Greek-speaking East<sup>170</sup>, but not (yet) archaeologically attested for Asia Minor thus far.

Moreover, the currently available data suggest that the private bathing installations progressively evolved from simple to more complex, with a gradual development from one-room heated baths to two-room baths in the late 1<sup>st</sup>–early 2<sup>nd</sup> century A.D., including an *apodyterium/tepidarium* and a *caldarium*, and even more extended bath suites of the ›row‹, or ›ring type‹. The richly decorated private bathrooms of this time, embellished with marble wall revetment, wall paintings, mosaics and marble floors and located in easily accessible areas of the house, took an important place within the framework of the élite custom of receiving and impressing guests and visitors. The continuous development of richly decorated private baths enclosing several specialised bathrooms finally resulted in the large lavishly-decorated private baths of the late antique élite residences. More than before, private baths played now a decisive role in the self-representation of the élite house owner.

The architectural, infrastructural and decorative features of the private bath complexes of Imperial Asia Minor known at date suggest that they were inspired by ›Italian‹ models. As

<sup>169</sup> For the discussion on decline and change in the late antique city: cf. e. g. Liebeschuetz 2001; Whittow 2001 and 2003; Ward-Perkins 2005; Knight 2007.

<sup>170</sup> For Hellenistic Palestine (150–36 B.C.) put in its Mediterranean context: cf. Hoss 2005, 38–45.

shown by the example of ›Hanghaus 2‹ at Ephesos, baths were presumably incorporated in private dwellings by members of the local élite, while it can also be assumed that people with an Italian connection opted for ›Italian-inspired‹ baths. Consequently, the study of private bathing installations could be a significant research factor within the current ›Romanization debate‹, as these baths seem to reflect and to express a preference for ›Western‹ models.

In conclusion, it can only be hoped that future discoveries and investigations of Roman and late antique houses and their private baths will add to our current knowledge of the development, architectural shape, infrastructure, decoration and socio-cultural importance of this luxurious ›Roman‹ architectural feature and the related phenomenon of bathing in a ›Western style‹. Only then it will be possible to conclude upon several aspects which remain still unanswered at present, such as details on the actual bathing process and similarities and differences between private bathing customs in the different areas of the Mediterranean.

*Abstract:* Bathing, both in public and private contexts, formed an element typical of the Roman lifestyle. In spite of this, private bathing and private bath complexes have received only limited scholarly attention thus far and studies have been restricted almost entirely to the West. This article focuses on the bathrooms that are archaeologically attested in Roman and late antique private dwellings in Asia Minor. Apart from giving an overview of the evidence, attention is paid to the plan and dimensions of the private bath complexes, their water and heating infrastructure and decorative schemes. Subsequently, Roman and late antique private baths are compared with their Hellenistic precursors. Finally, the identity of the house owners who embellished their houses with ›Western‹ bathing installations, is questioned.

BADEN IM ›WESTLICHEN STIL‹. PRIVATE BADEANLAGEN  
IM RÖMISCHEN UND SPÄTANTIKEN KLEINASIEN

*Zusammenfassung:* Baden, sowohl im öffentlichen als auch im privaten Kontext, bildete ein charakteristisches Element des römischen Lebensstils. Dennoch haben das private Baden und private Badeanlagen bisher in der Forschung nur begrenzt Beachtung gefunden und die Untersuchungen waren fast ausschließlich auf den Westen begrenzt gewesen. Dieser Artikel konzentriert sich auf jene Bäder, die archäologisch in römischen und spätantiken privaten Wohnhäusern in Kleinasien nachgewiesen werden können. Neben einer Übersicht über die Zeugnisse finden auch die Pläne und Dimensionen privater Badeanlagen, ihre Wasserversorgung und Beheizung sowie ihr Gestaltungskonzept Beachtung. Anschließend werden die römischen und spätantiken Privatbäder mit ihren hellenistischen Vorläufern verglichen. Schließlich wird nach der Identität der Hausbesitzer gefragt, die ihre Häuser mit ›westlichen‹ Badeanlagen ausgestalteten.

›BATI TARZINDA‹ HAMAMLAR. ANADOLU'DA ROMA VE GEÇ ANTİK  
DÖNEMDE ÖZEL HAMAM YAPILARI

*Özet:* Hamamlar, hem kamuya açık hem de özel bağlamda olsun, Roma dönemi yaşam tarzının karakteristik bir unsurunu oluşturur. Bununla birlikte özel hamamlar ve özel hamam yapıları şimdiye dek araştırmalarda yalnızca sınırlı olarak dikkate alınmıştı ve incelemeler hemen hemen

sadece batıdakilerle sınırlı kalmıştı. Bu makale Anadolu'daki konutlarda arkeolojik olarak belgelenen Roma dönemi ve Geç Antik döneme ait hamamlara odaklanmaktadır. Kanıtlara toplu olarak bakılmasının yanı sıra, hamam yapılarının boyut ve planları, su temini ve ısıtma ile inşaa düzenleri de dikkate alınmaktadır. Bunun ardından, Roma dönemi ve Geç Antik dönemdeki özel hamamlar Hellenistik öncelleriyle karşılaştırılmaktadır. Son olarak da, evlerini ›batılı‹ hamam yapılarıyla donatan ev sahiplerinin kimliği üzerinde durulmuştur.

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