

ARTÍCULOS

From *balnea* to Hammams. Late Antique Bath Design in Cyrenaica as Inspiration for Early Islamic Hammams?*

De los *balnea* a los hammams. ¿El diseño del baño tardoantiguo en la Cirenaica como inspiración para los primeros baños árabes?

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Abstract

This article examines how a specific late antique bathhouse design in the Roman province of Cyrenaica, operating base for the Islamic conquest of Ifrīqiyah, influenced the development of hammams in North Africa and al-Andalus. The archaeological remains of late antique/Byzantine baths and early hammams are compared to demonstrate the strong similarities in the general plan and the layout of the hot room, pointing to perpetuating building schemes that survive until today in Moroccan hammams. The most distinct feature was a rectangular hot room, heated by a single furnace, which was flanked by rectangular *exedrae* that could contain rectangular basins. This ‘Western’ hammam design was markedly different from contemporaneous hammams in the East, which in turn continued building traditions of Eastern Roman-Byzantine public baths. Contrary to what has previously been assumed, this article demonstrates how the ‘Western’ design did not originate in (early) medieval Morocco and al-Andalus, subsequently spreading eastwards in the Mediterranean, but rather originated in Roman-Byzantine North Africa, spread westwards and then returned by way of cultural circularity to its birthplace in an adapted form.

Key words: Roman baths and bathing habits; Byzantine baths; Late Antiquity; early hammams; Cyrenaica; North Africa; al-Andalus.

Resumen

Este artículo examina la manera en que el diseño específico de las casas de baños de la Antigüedad tardía en la provincia romana de la Cirenaica, base de operaciones para la conquista islámica de Ifrīqiya, influyó en el desarrollo de los hammams en el norte de África y en al-Andalus. Los restos arqueológicos de los baños bizantinos/tardoantiguos y los primeros hammams son puestos en comparación para demostrar las grandes similitudes de su trazado general y dentro de este, del diseño del *caldarium* en particular, lo que apunta a la pervivencia de los esquemas de construcción que sobreviven hasta el día de hoy en los hammams marroquíes. La característica más distintiva era la estancia rectangular para el baño de calor, calentada por un solo horno, y flanqueada por dos exedras que albergaban sendas bañeras rectangulares. Este diseño de hammam «occidental» era marcadamente distinto de los hammams contemporáneos en Oriente, que a su vez continuaron con el diseño tradicional de los baños públicos romano-bizantinos orientales. Contrariamente a lo que se presuponía, este artículo demuestra que el diseño «occidental» no se originó en los primeros momentos del Marruecos medieval y de al-Andalus, extendiéndose posteriormente hacia el Mediterráneo oriental, sino que se originó en el norte del África romano-bizantino, extendiéndose hacia el Oeste, para regresar, a través de la circularidad cultural, al lugar de origen con nuevas adaptaciones.

Palabras clave: Baños romanos y hábitos de higiene; baños bizantinos; Antigüedad tardía; primeros hammams; provincia Cirenaica; Norte de África; al-Andalus.

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Introduction

The hammams have long been considered as the only legitimate heirs of the Roman public baths. The obvious similarities in general layout and technology have provided scholars with important evidence of a continuity in bathing architecture from the late antique to the early Islamic period.¹ Indeed the earliest hammams in the Umayyad heartland, comprising modern Syria, Jordan and Israel-Palestine, show strong similarities with Roman-Byzantine bathhouses.² Some existing Roman baths were even gradually adapted to Islamic bathing habits.³ The situation in North Africa at this time is, however, far less clear. Due to a lack of contemporaneous written sources and the patchy archaeological evidence, little is known of the early hammams during the first centuries of the Islamic era. This article will link the obvious differences that existed between the medieval hammams in the Maghreb and the Mashreq to different ‘prototypes’ of local Roman-style baths that may have inspired medieval hammam design.⁴

From Roman-Byzantine *balnea* to Islamic hammams in the Middle East

The public bathhouse was one of the most important social hubs within any Roman city.⁵ Going to the baths meant meeting up with friends and sharing the latest gossips as much as it was taking care of one’s health and appearance.⁶ The building itself comprised a dressing room (*apodyterium*), a cold room (*frigidarium*) with one or more cold water pools (*piscinae*), a tepid room (*tepidarium*) with or without a pool or basin, and a hot room (*caldarium*) with one or more warm water pools (*solia* or *alvei*). This basic layout could then be enlarged with other

cold and heated rooms of various functions, often including sweat rooms (*sudatoria*), latrines and multipurpose halls (*basilicae*).⁷ The warm section of the baths was heated by a hypocaust system, consisting of a suspended floor resting on pillars which enabled the hot gasses from a furnace to circulate underneath the walking level. This ‘hollow floor’ was connected to ‘hollow walls’, often created by box tiles (*tubuli*), through which the hot gasses were drawn into chimney flues in the vaults.⁸

There does not seem to have been a type of public bathhouse in Arabia before the start of the Islamic conquest in A.D. 632.⁹ It was only when the Arab conquerors took the Roman-Byzantine cities of the Middle East that they discovered this specifically Roman type of building. As the Arab rule of the conquered Roman cities seems to have been mainly military in nature, imposing taxes on its citizens, it is difficult to know whether the new rulers and settlers made use of the Roman-style baths.¹⁰ However, as early as the first quarter of the eighth century, the Umayyad rulers succumbed to the Roman style of bathing, building Roman-style private baths attached to their desert castles or hunting lodges.¹¹ The layout and technology of these early Islamic baths indeed copied the design of the Roman-style baths of the region.¹² One entered a large unheated multipurpose hall, possibly serving as both dressing room and cold room, and then continued into a tepid and warm room. The latter had two small single-person pools lying opposite to one another.¹³ If we compare the plans and the heating technology of the Roman baths of Brad (Syria, fig. 1) with the early Umayyad baths of Qusair Amra (Jordan, fig. 1), we can immediately see the strong resemblances in layout: a large multipurpose cold room (court yard in Brad, hall in Qusair Amra) was followed by a

¹ De Miranda, *L’Hammam nell’Islam*, p. 12; Charpentier & Denoix, “Bains antiques et médiévaux”; Pagani & D’Amora, “Dalle terme al hammām”.

² The term late antique is used here to denote the period between the reign of Diocletian (A.D. 285) and the Muslim conquest of North Africa (A.D. 675, foundation of Kairouan). The term Byzantine is used only for the period following the invasion of Justinian (A.D. 534).

³ Charpentier, “Les bains d’al-Bāra”.

⁴ For the differences between hammams in the Mashreq and Maghreb, see Denoix, “Des thermes aux hammams”, p. 25; De Miranda, *L’Hammam nell’Islam*, pp. 69-70; Charpentier & Denoix, “Bains antiques et médiévaux”, p. 94; Lamei, “Egyptian baths”, p. 311.

⁵ DeLaine, “Bathing and society”.

⁶ Fagan, *Bathing in public*, pp. 75-103; Blonski, *Se nettoyer à Rome*, pp. 322-324.

⁷ Nielsen, *Thermae et Balnea*, pp. 3-4.

⁸ For detailed information on hypocaust systems, see Adam, *La construction romaine*, pp. 287-294; Degbomont, *Le chauffage par hypocauste*; Schiebold, *Heizung und Wassererwärmung in römischen Thermen*.

⁹ Pagani & D’Amora, “Dalle terme al hammām”, p. 8.

¹⁰ On the nature of the Arab rule over Roman North Africa, see Kennedy, *The Great Arab Conquest*, pp. 214-215.

¹¹ Yegül, *Baths and bathing*, pp. 339-349; Genequand, “Stratégies d’acquisition de l’eau”; Tohme, “Between balneum and hamam”.

¹² Arce, “Umayyad building techniques”; Arce, “The Umayyad baths at Amman citadel and Hammam al-Sarah”.

¹³ On the architecture and layout of early hammams, see Grotzfeld, *Das Bad im arabisch-islamischen Mittelalter*, pp. 28-30; Yegül, *Baths and bathing*, pp. 339-349; Charpentier & Denoix, “Bains antiques et médiévaux”, pp. 88-92.

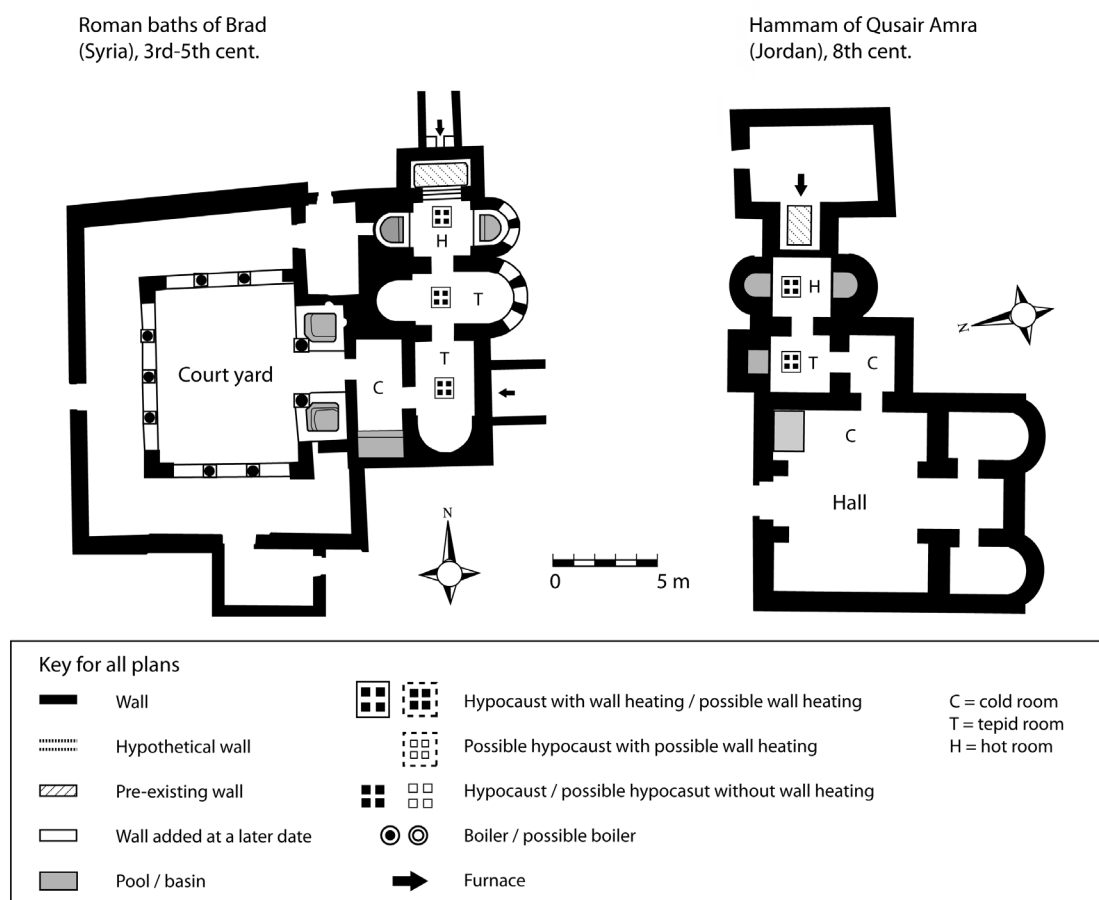


Figure 1. Comparison of the plans of Roman baths of Brad (Syria, third century) and the early hammam of Qusair Amra (Jordan, eighth century) (redrawn by the author after resp. Charpentier & Denoix, “Bains antiques et médiévaux”, p. 88, fig. 9; Yegül, *Baths and bathing*, p. 342, fig. 428).

string of heated rooms, lying on the same axis, and ending in a *caldarium* with two opposed semi-circular heated pools. The most important difference was the addition of a water boiler above the furnace of this *caldarium*, generating steam that led directly into this hot room. The transition from a Roman-style *caldarium* with the emphasis on hot water pools and a ‘dry heat’ from the hypocaust, to an Islamic-style *caldarium* (called *ḥarāra* or *magḥṭas*) with an emphasis on hot water basins and ‘steamy heat’, is best illustrated in the baths of al-Bāra (Syria, fig. 2).¹⁴ Here, the Roman bath was gradually transformed into an Islamic bath, transforming the pools into fountains and wash basins and introducing steam directly into the hot room.

¹⁴ Charpentier, “Les bains d’al-Bāra”.

The Muslim conquest of North Africa

The conquest of North Africa by the Arab troops is only known through ninth- and thirteenth-century literary evidence.¹⁵ The archaeological evidence is extremely meagre.¹⁶ From what we can tell from the sources, the conquest was not a single movement, but rather a slow process advancing in waves. The great fortress of Babylon at the head of the Nile delta was taken from the Byzantine troops in Egypt in A.D. 640. By A.D. 642, Alexandria was in Muslim hands.¹⁷ Rather than settling in the ancient Roman-Byzantine town, the Muslim rulers founded

¹⁵ Brett, “The Arab conquest and the rise of Islam in North Africa”, pp. 490-495; Kennedy, *The Great Arab Conquest*, p. 206; Fenwick, “The Fate of the Classical Cities”, p. 137.

¹⁶ Fenwick, “Early Medieval Urbanism in Ifrīqiya”, p. 204.

¹⁷ Saunders, *A History of Medieval Islam*, pp. 52-53; Sijpestijn, “The Arab conquest of Egypt”, pp. 442-443.

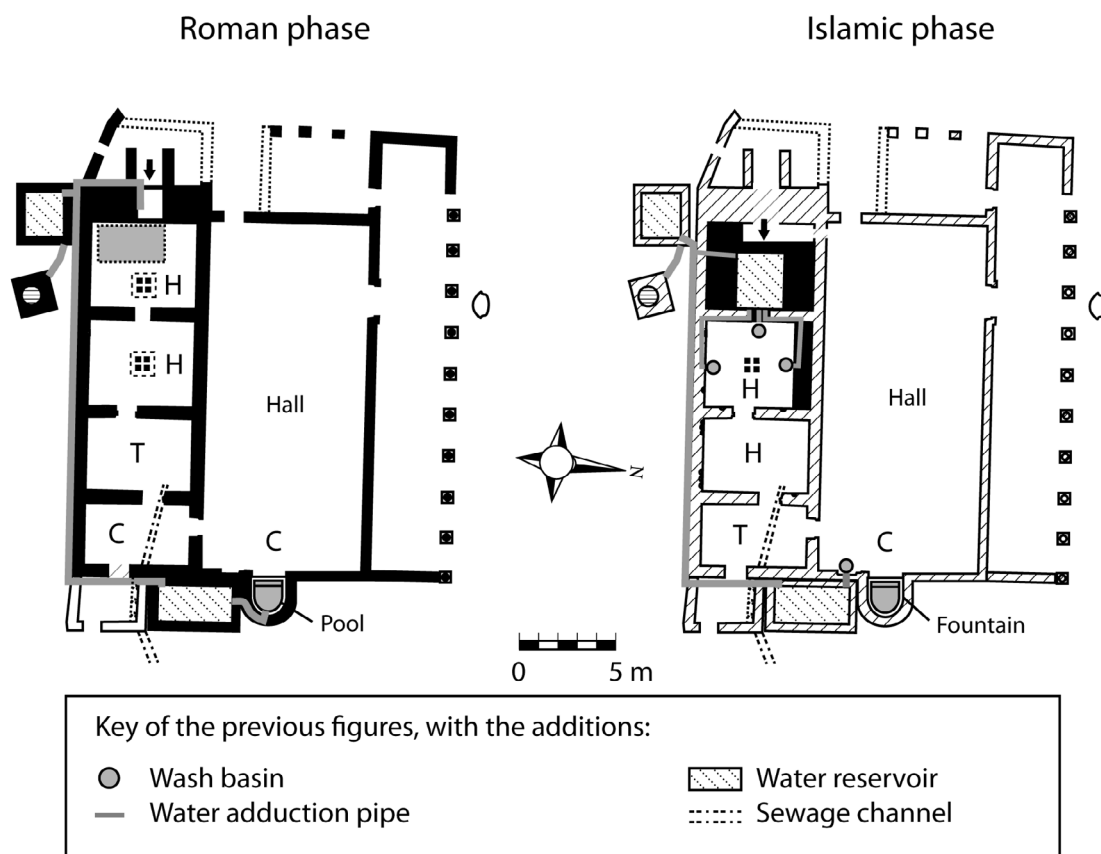


Figure 2. Comparison of the Roman and Islamic phase of the baths of al-Bāra (Syria) (redrawn by the author after Charpentier, “Les bains d’al-Bāra”, p. 486, fig. 7 and p. 490, fig. 17).

the new city of al-Fustāt, located on the outskirts of modern Cairo.¹⁸ No remains of early hammams have been found here, although the fourteenth-century historian Ibn Duqmaq mentions a small bathhouse, hammam al-Far or Baths of the Rat, being erected during the foundation of the city.¹⁹ Several bathhouses in Egypt continued to be used after the Arab conquest, including the double baths in the pilgrimage site of Abu Mena, the Byzantine baths in *Marea* or the baths of smaller settlements such as Kom el-Ahmar.²⁰ In these cases of continued use by local populations there is, of course, little

evidence that the new Arab rulers also used and invested in these baths. The documentary papyri pertaining to baths of the late seventh and eighth century are not very enlightening in this respect, although the terminology to denote the different rooms and the personnel of the baths is still the same as before, e.g. Stud. Pal. 8, 980; P. Apoll. 85; SB 16, 12254.²¹

From Egypt, the Arab conquest continued further west, into Cyrenaica. The Byzantine forces had to fall back to *Taucheira* (Tocra) to withstand the raids of the Arab troops. Eventually, Cyrenaica was abandoned and *Taucheira* became a military stronghold of the Arab command.²² The ancient Roman province of Cyrenaica, called Barqa by the Muslims, hence acted as a buffer zone in the protection of Egypt. From Cyrenaica, a wave of invasions in A.D. 647 reached far into *Byzacena*, roughly southern Tunisia,

¹⁸ Scanlon, “Al-Fustāt” (with anterior bibliography).

¹⁹ For the archaeology of al-Fustāt, see Gayraud, “Fostat: évolution d’une capitale arabe”; Sheehan, *Babylon of Egypt*. For the Baths of the Rat, see Denoix, *Décrire le Caire. Fustāt-Misr d’après Ibn Duqmaq et Maqrizi*, pp. 73-80.

²⁰ For the continued use of late antique baths in Egypt, see Fournet & Redon, “Romano-Byzantine Baths of Egypt”; Maréchal, *Public Baths and Bathing Habits in Late Antiquity*, p. 175. For the baths of Abu Mena: Müller-Wiener, “Abu Mena”. For *Marea*: Szymanska & Babraj, *Marea Vol. 1. Byzantine Marea*, p. 13. For Kom el-Ahmar: Khashab, *Ptolemaic and Roman baths of Kōm el Ahmar*, p. 30.

²¹ Maréchal, *Public Baths and Bathing Habits in Late Antiquity*, p. 89.

²² Christides, *Byzantine Libya*, p. 38; Kennedy, *The Great Arab Conquest*, p. 206.

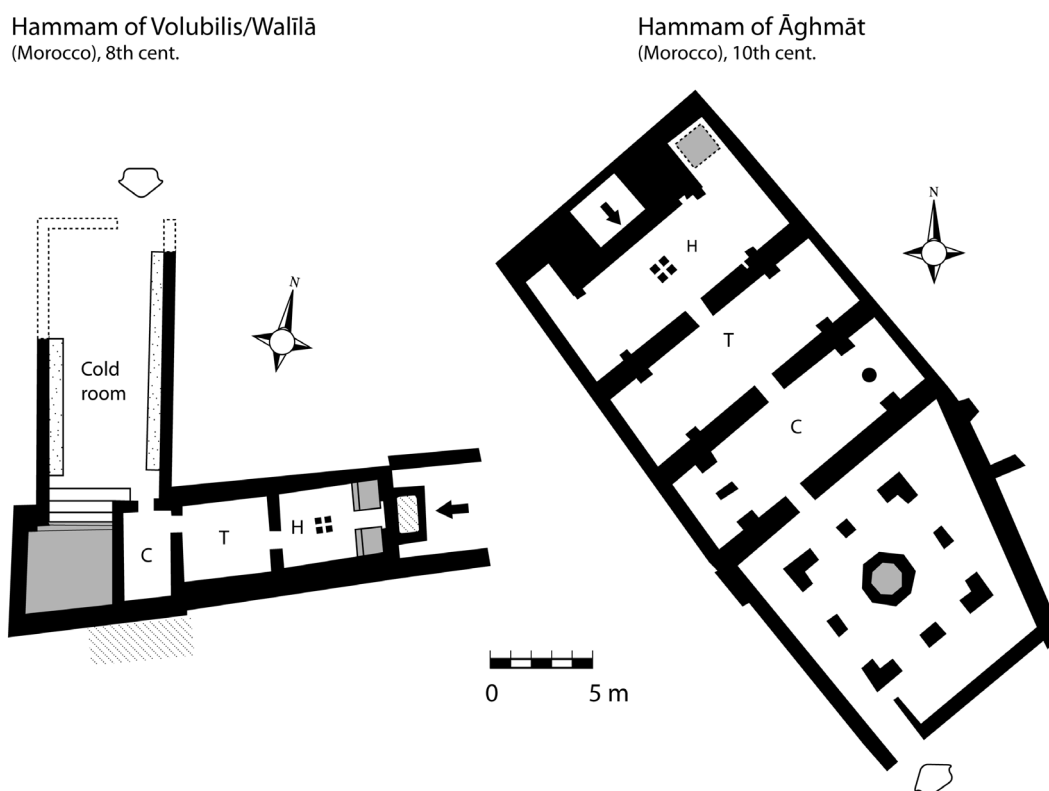


Figure 3. Plans of the early hammams at *Volubilis/Walilā* and *Āghmāt* in Morocco (redrawn by the author after resp. Fentress & Limane, “Excavations”, p. 118, fig. 4; Fili & Messier, “Le Hammam d’Aghmat”, p. 355, fig. 1).

defeating the Byzantine exarch Gregorius in an open battle outside the walls of *Sufetula* (Sbeitla).²³ The Byzantine troops and their Amazigh allies were forced to retreat into *Proconsularis* (northern Tunisia). A series of Arab raids in the 660s ended with the foundation of the permanent settlement of Kairouan in A.D. 675. In the following quarter of the seventh century, the Arab troops had to fight both the Byzantine troops and the Amazigh tribes in the Algerian Aurès mountains before they could finally unify North Africa, capturing Carthage in A.D. 698 and Tangier in A.D. 708.²⁴

As in Egypt, the archaeological evidence for the first stages of the occupation of the Roman cities by Arab troops is very flimsy.²⁵ Some public baths

may still have been in use in the early phases of the Muslim rule. The Baths of the Fifth Century in *Sitifis* (Sétif, Algeria) were still standing in the early Islamic period, although we cannot be certain that the building was still used as a bathhouse.²⁶ In Cyrenaica, there is also little evidence for a continued use of public baths. In the Byzantine Baths in *Cyrene* (Shahat), Arabic graffiti could point to the continued use of the baths.²⁷ In the Byzantine baths of *Taucheira*, an inscription in praise of Allah was found in the central entrance to the baths.²⁸ The fort of Mechili was also reoccupied in the early Islamic period, although the bathhouse seems a Roman construction.²⁹ A number of small baths in Cyrenaica’s hinterland may still

²³ Christides, *Byzantine Libya*, pp. 40-42; Kennedy, *The Great Arab Conquest*, p. 207.

²⁴ Brett & Fentress, *The Berbers*, pp. 83-87; Christides, *Byzantine Libya*, pp. 47-48.

²⁵ Bennabès, “Des provinces byzantines à l’Ifriqiya”, p. 283; Fenwick, “Early Medieval Urbanism in Ifriqiya”, p. 205. For the important urban transformations of the North African cities during Late Antiquity, see Leone, *Changing Townscapes*.

²⁶ Mohamedi & Fentress, “Fouilles de Sétif 1978-1982”, p. 471.

²⁷ Goodchild, *Kyrene und Apollonia*, p. 132.

²⁸ Jones, “The Byzantine Bath-house at Tocræ”, p. 111.

²⁹ The fort was definitely in use in the Islamic period, see Goodchild, “The Roman and Byzantine limes in Cyrenaica”, p. 72, note 28. The bathhouse still had dimensions in Roman feet, pointing to a Roman/Byzantine construction date, see Stucchi, *Architettura cirenaica*, p. 476.

have been in use in the Islamic period, but hard archaeological evidence is lacking at this point.³⁰ In *Thugga* (Dougga, Tunisia), a small bathhouse with a single heated room near the forum may date from early Islamic phase of the city.³¹ The remains of a bath adjacent to the old mosque of Agadir (Morocco) may date to the eighth or ninth century, but were too damaged to make any conclusions about the plan.³² The so-called ‘extra-muros bath’ in *Volubilis* (Morocco), renamed *Walilā* by Muslims, is the only well-studied example of an early Islamic hammam in North Africa (fig. 3). The bathhouse, lying west of the city walls near a riverbed, was dated by eighth-century coins found in test trenches dug underneath the *frigidarium* floor.³³ The hammam of *Āghmāt* (Morocco) is the second oldest example (fig. 3), but already dates from the (early) tenth century.³⁴

A specific type of hot room in Cyrenaica

A closer look at the plans of late antique baths in Cyrenaica reveals a remarkable recurrence in the shape of the *caldarium*. This hot room often had a rectangular plan and was heated by a single furnace, in the side of the room opposite the doorway. This furnace was flanked by two square or rectangular single-person pools. Such a *caldarium* can be found in the ‘Byzantine Baths’ of *Taucheira* (fig. 4), dated to the sixth century, the unfinished ‘Byzantine Baths’ at *Apollonia* (sixth century?, fig. 4), the second phase of the City Baths in *Ptolemais* (sixth century?, fig. 5), the small baths of the village near Wadi Senab (unknown date, fig. 4) and the early seventh-century fortress baths of *Taucheira* (fig. 4).³⁵ In the so-called ‘House of Paulus’ in *Ptolemais*, a private bath was turned into a public bath in the sixth century.³⁶ One

of the two adjacent rectangular *alvei* of the original *caldarium* was transformed into a furnace with an overlying boiler, creating a layout that also resembles the abovementioned *caldaria*, but only one instead of two *alvei* flanked the furnace-cum-boiler. The low number of semi-circular or apsidal pools is also remarkable, especially since this shape was very popular in late antique bath design in North Africa.³⁷ The Byzantine baths in *Taucheira* have been securely dated to the Byzantine period, making it tempting to attribute the introduction of this bath-design to the Byzantine occupation.³⁸ However, the construction date of the other examples is less clear, and although a sixth-century date could certainly be envisaged for these buildings, an earlier construction date cannot be ruled out on the basis of the available evidence.

This specific design of the *caldarium* seems to have been restricted to Cyrenaica and was not found in other late antique or Byzantine-period bathhouses in North Africa.³⁹ In some late antique baths, the *caldarium* had two adjacent *alvei*, but these never flanked a boiler, which lay in the *praefurnium* directly behind the *alvei*. This was the case in the so-called *Balnea Privata* in Carthage, dated to the late fourth or early fifth century, or the baths at Tébessa Khalia (Algeria), dating from the fourth or fifth century.⁴⁰ The baths of the Byzantine fortress in *Thamugadi* (Timgad, Algeria), dated by an inscription to A.D. 539-540, had a different layout, where the two square single-person pools in the *caldarium* were located at opposite ends of the room.⁴¹ In Egypt, the *caldarium* was often equipped with two single-person *alvei* lying directly side by side, not separated by a boiler, e.g. in the North Baths (early sixth century) and phase 2 of the South Baths (late fifth or early sixth century) in Abu Mena, Karm Kandara (Byzantine period) or Mergham (fifth century).⁴² In *Palestina*, the restored *caldarium* of the Southern Baths (sixth century?) in *Scythopolis* (Beth She’an/Baysan, Israel/Palestine) and the sixth-century baths in the fortified sanctuary at Dharih (Jordan) had almost

³⁰ For an overview of some of these late antique baths, see Gambini & Catani, “Nuove terme bizantine nei dintorni di Cirene”. Also Stucchi, *Architettura cirenaica*, passim and more recently Maréchal, “Roman Public Baths in Modern Libya”.

³¹ The baths have been preliminary dated to the early Islamic period (ninth century) on the basis of stucco decoration, see Poinssot, *Les ruines de Dougga*, p. 41. It is unclear whether this bath is the same as the ‘private bath’ described in de Haan, *Römische Privatbäder*, pp. 258-260, nr K.35.

³² Bel, “Fouilles”, pp. 42-45.

³³ Khayari, “Les thermes extra muros à Volubilis”, p. 308; more recently Fentress & Limane, “Excavations”, Fentress, “Walilā aux Moyen Age”, pp. 84-89.

³⁴ Fili & Messier, “Le Hammam d’Aghmat”, p. 351.

³⁵ For *Taucheira*: Jones, “The Byzantine Bath-house at Tocra”. For *Apollonia*: Pedley, “The Byzantine Baths”. For *Ptolemais*: Kraeling, *Ptolemais*, pp. 160-175. For Wadi Senab: Luni, “Le terme byzantine”. For the fortress baths in *Taucheira*: Jones, “Excavations at Tocra”.

³⁶ Kraeling, *Ptolemais*, pp. 140-160, for the dated inscription about the conversion, p. 211.

³⁷ Maréchal, *Public Baths and Bathing Habits in Late Antiquity*, p. 190.

³⁸ The ‘Fortress Bath’ of *Taucheira* may even date from the earliest Islamic phase, see Fenwick, “From Africa to Ifriqiya”, p. 20.

³⁹ Maréchal, *Public Baths and Bathing Habits in Late Antiquity*, p. 190.

⁴⁰ For Carthage: Hansen, *Carthage*, pp. 116-117; for Tébessa Khalia: Yegül, *Baths and bathing*, p. 243.

⁴¹ Lassus, “La forteresse byzantine”, pp. 123-146.

⁴² Fournet, Redon & Vanpeene, “Catalogue”, pp. 451-457 (Abu Mena), p. 479 (Karm Kandara), p. 487 (Mergham).

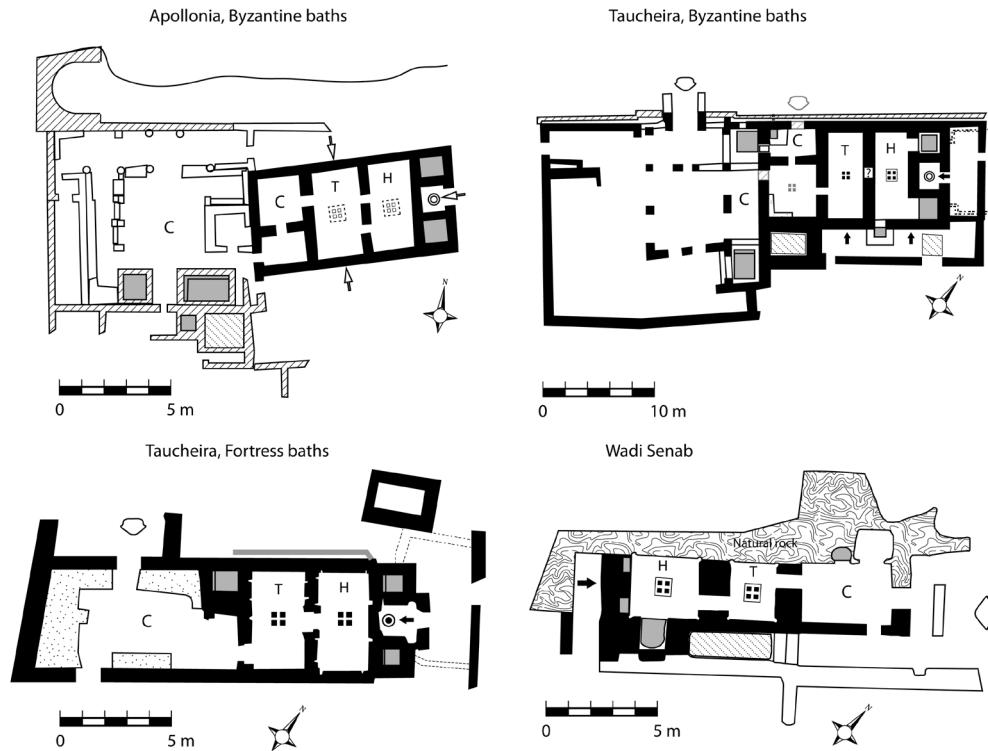


Figure 4. Comparison of the plans of the baths of *Apollonia*, *Taucheira* and *Wadi Senab* in Cyrenaica (redrawn by the author after resp. Pedley, “The Byzantine Baths”, p. 227, fig. 2; Jones, “The Byzantine Bath-house at Tocræ”, p. 109, fig. 2; Jones, “Excavations at Tocræ”, p. 118, fig. 10; Luni, “Le terme byzantine”, p. 267, fig. 1).

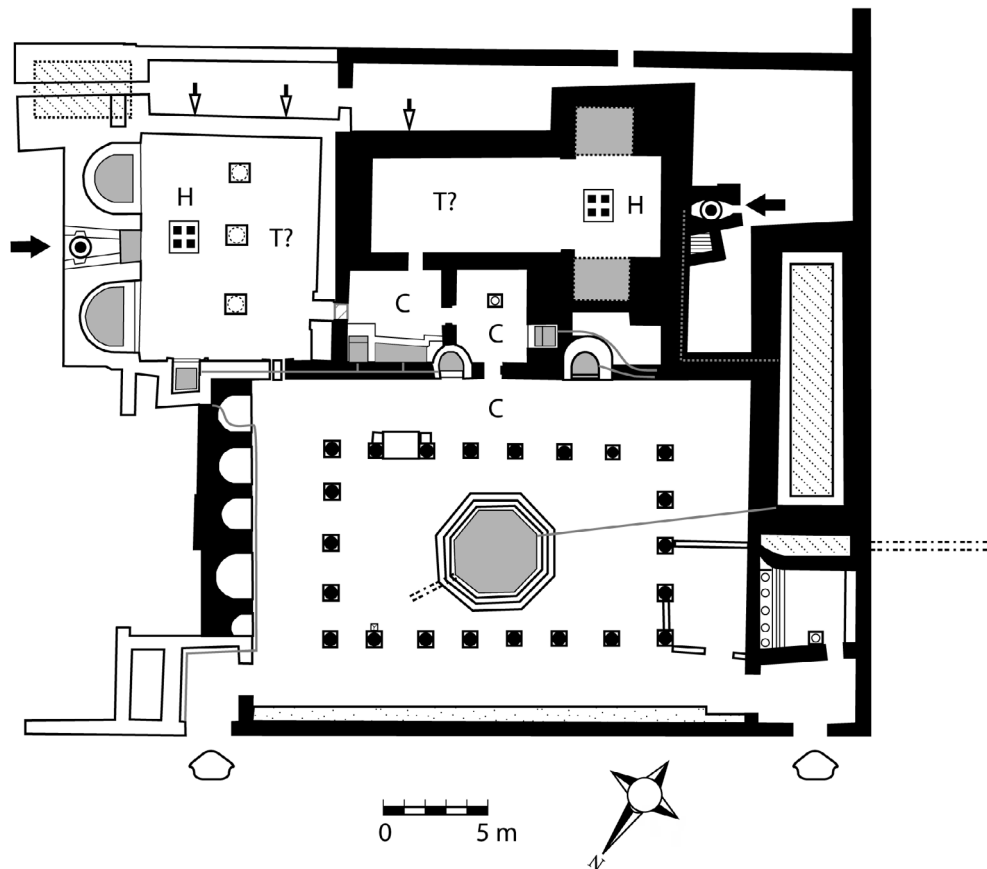


Figure 5. Plan of the late antique public baths in *Ptolemais* (Cyrenaica) (redrawn by the author after Kraeling, *Ptolemais*, plan XXI).

square single-person *alvei* lying side by side.⁴³ However, in both late antique North Africa and the Middle East, cruciform *caldaria* with three *alvei* in the arms of cross or square *caldaria* with opposing *alvei* or *alvei* at a right angle to one another are most common.⁴⁴ Such square rooms would have been covered by domes. This plan was also adopted in the earliest Umayyad hammams in the Middle East (see above).

Early hammams in North Africa and al-Andalus

If we look at the plan of the eight-century hammam in *Volubilis/Walīlā*, we can immediately recognize the ‘Roman-Byzantine’ layout (fig. 3). First, the bathers undressed in a cold room with benches along the walls. Then they acclimatized to the heat in two intermediary tepid rooms, before entering the hot room. Here they could sweat out the bad bodily fluids and wash at one of the two warm water basins.⁴⁵ When returning to the dressing room, they could refresh in the cold water pool. The entire sequence of *frigidarium-tepidarium-caldarium* of a ‘standard’ Roman bathhouse was copied, as was the heating technique by way of a hypocaust.⁴⁶ An important difference with Roman baths, however, is that only one room was heated by floor heating, and that this raised floor was not created using the standard pillars but with a channel. To compare, we can look at some Roman-period baths in *Volubilis*, which may have been late antique in date or were still in use in Late Antiquity (fig. 6).⁴⁷ All had three rooms heated by traditional hypocausts and sometimes the pools had semi-circular shapes. It is clear that an elongated *caldarium* with two basins flanking a furnace with a boiler is strongly reminiscent of the *caldaria* found in Cyrenaica, rather than leaning towards the more widespread plan with opposing or perpendicular *alvei* encountered in Roman

Volubilis and the rest of North Africa and the Middle East.⁴⁸ The channel hypocaust, which had more in common with contemporary pottery kilns than with Roman-style hypocausts, further points to an evolution independent of the older examples in Roman *Volubilis*.⁴⁹ The *Walīlā* hammam, with its single heated room with basins flanking a boiler room and characterized by its rectangular shapes (and barrel vaults), thus seems to have more affinities with the examples in Cyrenaica than with the local Roman predecessors, which had been buried after an earthquake hit the city two centuries before. Nevertheless, the hammam still had strong roots in Roman bath tradition: the cold pool is still present, a feature that will disappear entirely in medieval hammams, and also the steam generated by the boiler does not seem to be introduced into the *caldarium*, a feature that will become standard in later hammams.⁵⁰ The tenth-century hammam in Āghmāt (Morocco) also has a hot room with two rectangular apses for ablutions flanking a central furnace room, although the plan is more elongated (fig. 3). The excavators hint at the possibility that at least one of these apses used to be a pool or warm water basin.⁵¹ The bathhouse of the palace at Beni Hammad (eleventh century) also had a linear plan consisting of a cold, tepid and hot room.⁵² The early excavations in 1913 did not identify pools or basins next to the boiler room, but the limited investigation of the furnace area, which was erroneously identified as the main entrance, does not exclude the possibility either.

Even if the resemblances between the early hammam in *Volubilis* and the late antique/Byzantine baths in Cyrenaica are intriguing, the lack of other comparable hammams makes it difficult to bluntly state that the design of the early hammams in North Africa was inspired by the ‘Cyrenaican’ type of late antique/Byzantine baths. Nevertheless, it is interesting to keep in mind that the Arab expansion in North Africa radiated from the strongholds in Cyrenaica, where the Muslim rulers undoubtedly came in contact with the ‘Cyrenaican’ type of *caldarium*. By the early seventh century, most of the large Roman-style bathhouses in North Africa had long fallen out of

⁴³ For *Scythopolis*: Peleg, “A Late Roman - Byzantine Bathhouse at Bet She’an”. For Dharih: Sartori, “Le bain tardif de Dharih”.

⁴⁴ Maréchal, *Public Baths and Bathing Habits in Late Antiquity*, p. 190.

⁴⁵ These were quite high and had no internal step for access, making an interpretation as pool unlikely, see Fentress & Limane, “Excavations”, p. 111.

⁴⁶ Khayari, “Les thermes extra muros à Volubilis”, pp. 302-306.

⁴⁷ The late antique phase of *Volubilis* is problematic, as earlier research often referred to the withdrawal of the Roman administration in A.D. 285 as a hard caesura in construction activity. See now however Fentress & Limane, *Volubilis après Rome*.

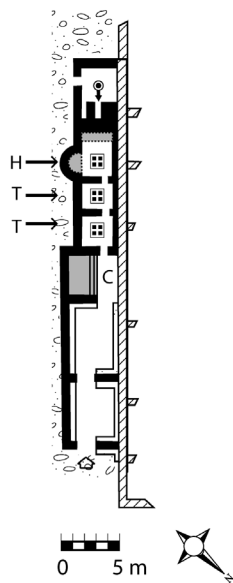
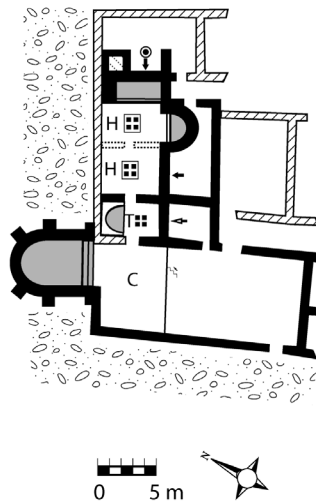
⁴⁸ Also noted and investigated by Fentress, “Walīlā aux Moyen Age”, p. 87.

⁴⁹ Fentress, “Walīlā aux Moyen Age”, p. 87.

⁵⁰ Thébert, *Thermes romains d’Afrique du Nord*, pp. 422-423.

⁵¹ Fili & Messier, “Le Hammam d’Aghmat”, p. 350.

⁵² Golvin, *Recherches*, p. 62.

Baths of the House of the Nereids
(second century or later)Baths of the House of the Works of Hercules
(second century or later)

North Baths (first to late third century)

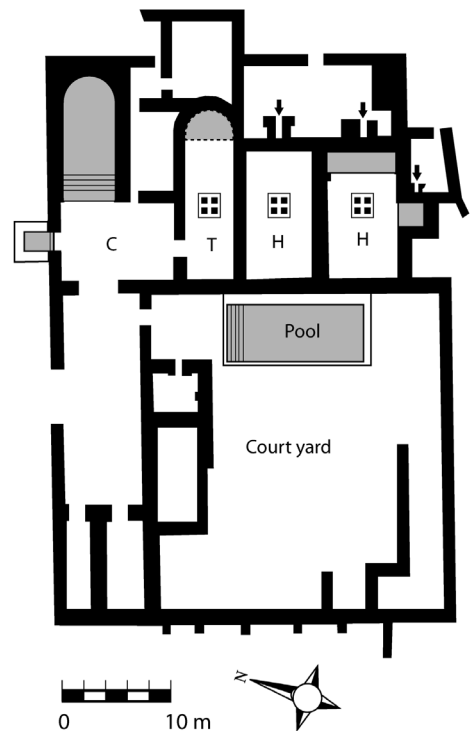


Figure 6. Plans of Roman baths in *Volubilis* (redrawn by the author after resp. Thébert, *Thermes romains d'Afrique du Nord*, p. 678, pl. CXXVIII.6; p. 689, pl. CXXXIX.2; p. 682, pl. CXXXII.1).

use and the Arab troops, occasionally raiding the surviving towns, may not have paid much attention to the fascinating ruins of the grand *thermae*.⁵³ The 'Cyrenaican' design may well have been the only examples of functioning baths that the Muslim troops were familiar with. As mentioned above, the Arab involvement in North Africa in the seventh century was mainly restricted to occasional raids, without leaving any permanent troops, governors or tax collectors in the cities. New construction activity was certainly not widespread during this first wave of the conquest. It would be interesting to discover whether newly founded cities such as Kairouan already had public hammams in this early phase, and if so, how these were designed.⁵⁴

The lack of archaeological evidence of early Islamic baths in North Africa can push us to look to another part of the former Roman Empire that was conquered by the Muslims. Some of the hammams in al-Andalus, the region of the Iberian Peninsula, which was conquered by the Arab troops from A.D. 711 onwards, show a remarkable

resemblance to the 'Byzantine bath-design' found in Cyrenaica. Recent research on the continuity of public baths from the Roman into the Visigoth and early Muslim period has shown that there was a clear break after the Roman period, implying the models for the hammams were imported from the Maghreb or the Middle East.⁵⁵ There is unfortunately little archaeological evidence from the earliest phase of the conquest. The Cercadilla-site in Cordoba may have had a hammam in the late eighth or probably ninth century. The remains, heavily spoliated in subsequent centuries, had two small basins or perhaps single-person pools.⁵⁶ This certainly reminds one of the hammam in *Volubilis*, but also of the late antique Cyrenaican baths.⁵⁷ The baths of the *calle Nerja* in Merida may even date to the eighth century and had similar small

⁵³ Fournier, *Les Bains d'al-Andalus*, p. 65.

⁵⁶ Fuertes Santos, Rodero Pérez & Ariza Rodríguez, "Nuevos datos", p. 191. Contrary to the Roman-Byzantine baths, the hot rooms in Andalusí hammams often seem to have had warm water basins rather than immersion pools, see Navarro Palazón & Jiménez Castillo, "The Islamic bath", pp. 344-345. Such basins for ablutions were already present in some late antique baths in Cyrenaica, e.g. in Wadi Senab or Ptolemais, see fig. 4 and 5.

⁵⁷ The resemblance to the Walīlā hammam was also noted by Fournier, *Les Bains d'al-Andalus*, p. 72.

⁵³ Maréchal, *Public Baths and Bathing Habits in Late Antiquity*, p. 175.

⁵⁴ The geographer Al-Bakri mentions 48 hammams in his description of eleventh-century Kairouan, see Al-Bakri, *Description de l'Afrique septentrionale*, p. 60.

square basins in the elongated hot room.⁵⁸ Even if other types of layout can be found among the first hammams in al-Andalus, the popularity of two square basins lying side by side in an elongated hot room is striking.⁵⁹ What is clear is that the plans of the earliest hammams, with rectangular rooms and square basins on linear and angular axis, had much more in common with the early hammams in present-day Morocco than the late antique baths in the Iberian peninsula, which were characterized by polygonal rooms and round, oval and semi-circular pools.⁶⁰

Towards regional variations in hammam design in the Middle Ages

The archaeological evidence for hammams in North Africa in the subsequent centuries (twelfth to fifteenth century) is slightly better. Besides the simple linear plan with a succession of cold, tepid and hot rooms, a layout with two parallel axes is also found: one axis regrouping the cold rooms and one axis regrouping the tepid and hot room.⁶¹ However, the elongated *caldarium* with its two *exedrae* flanking a boiler room is also found in this new layout, e.g. the twelfth-century hammam in Nedroma (Algeria; fig. 7).⁶² In both layouts, the hot room sometimes only had one *exedra* flanking the boiler room. The particular design of the hot room with two recesses (or sometimes one) flanking a boiler room also remained popular in al-Andalus. In cities such as Granada, the oldest surviving baths El Bañuelo (eleventh century) and the Alcazaba baths (eleventh century?) (Figs. 8 and 9) both had a simple linear plan of rectangular rooms and a hot room in which two recesses flanked the boiler room.⁶³ This layout of the hot room remained popular between the eleventh and fourteenth century in al-Andalus.⁶⁴

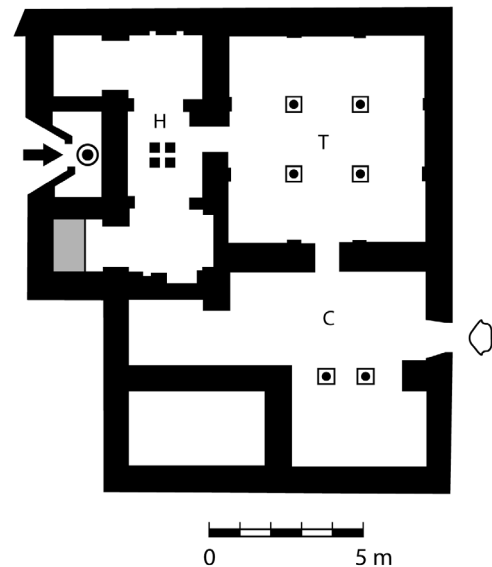


Figure 7. Plan of Hammam al-Bâli in Nedroma (Algeria, twelfth century) (redrawn by the author after Cherif-Seffadj, “The Medieval and Ottoman Hammams of Algeria”, p. 162, fig. 6).

The characteristic architectural features mentioned above (rectangular rooms and basins/pools, few curvilinear forms, ‘Cyrenaican’ *caldarium*), found in several hammams in al-Andalus over a long period of time, can also be found in another region influenced by North African Muslims. In Sicily and southern Italy, medieval bath design was strongly influenced by hammams, as the region came into contact with the Islamic cultural sphere through the emirate of Sicily (965-1060). Furthermore, the diplomatic and cultural ties with al-Andalus were very strong, which may have provided architectural influence as well.⁶⁵ The subsequent rulers, the Norman kings, still turned to Islamic hammams when constructing private baths in their castles.⁶⁶ The plan of the bathhouse of the Castel of Lagopesole (Basilicata, fig. 10), dated to around 1250, is strongly reminiscent of the Andalusí hammams, with a *caldarium* with two *exedrae* (lodging hot water basins or perhaps pools) flanking a boiler.⁶⁷ In other regions of Italy, contemporary bath architecture was more influenced by the Byzantine Empire, for example on the Amalfi coast, which had

⁵⁸ Feijoo Martínez, “Intervención arqueológica”.

⁵⁹ Three out of five examples in Fournier, *Les Bains d'al-Andalus*. Other layouts of early hammams: Fournier, *Les Bains d'al-Andalus*, pp. 73-91.

⁶⁰ Fournier, *Les Bains d'al-Andalus*, p. 76.

⁶¹ Cherif-Seffadj, “The Medieval and Ottoman Hammams of Algeria”, pp. 160-161.

⁶² Cherif-Seffadj, “The Medieval and Ottoman Hammams of Algeria”, p. 161.

⁶³ Espinar Moreno, *Baños Árabes*, resp. pp. 188-194, pp. 175-176; Orihuela & López-Osorio, “Knowledge and interpretation”.

⁶⁴ Navarro Palazón & Jiménez Castillo, “Arqueología del baño andalusí”, p. 92; Fournier, *Les Bains d'al-Andalus*, pp. 157-173.

⁶⁵ Russo, “*Hammam oder Balneum*”, p. 100.

⁶⁶ Russo, “*Hammam oder Balneum*”, p. 99.

⁶⁷ For the baths in castle of Lagopesole, see Fiorillo, “Il Balneum di Federico II”. The resemblance with the hammams in al-Andalus was also noted by Russo, “*Hammam oder Balneum*”, p. 99.

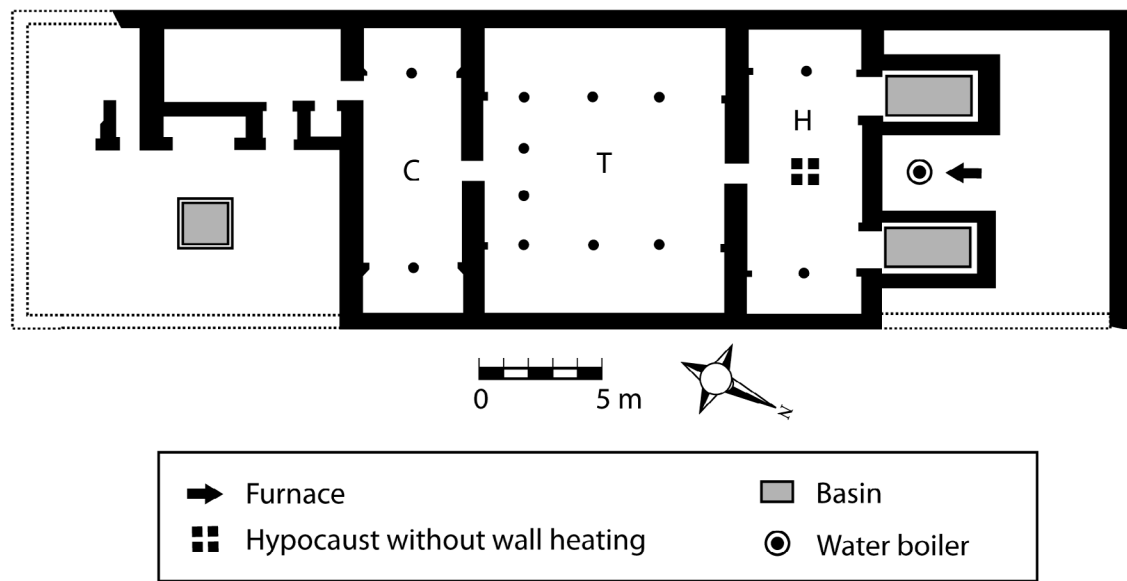


Figure 8. 'El Bañuelo' hammam in Granada (Spain, eleventh century) (redrawn by the author after Espinar Moreno, *Baños Árabes*, p. 193, unnumbered fig.).

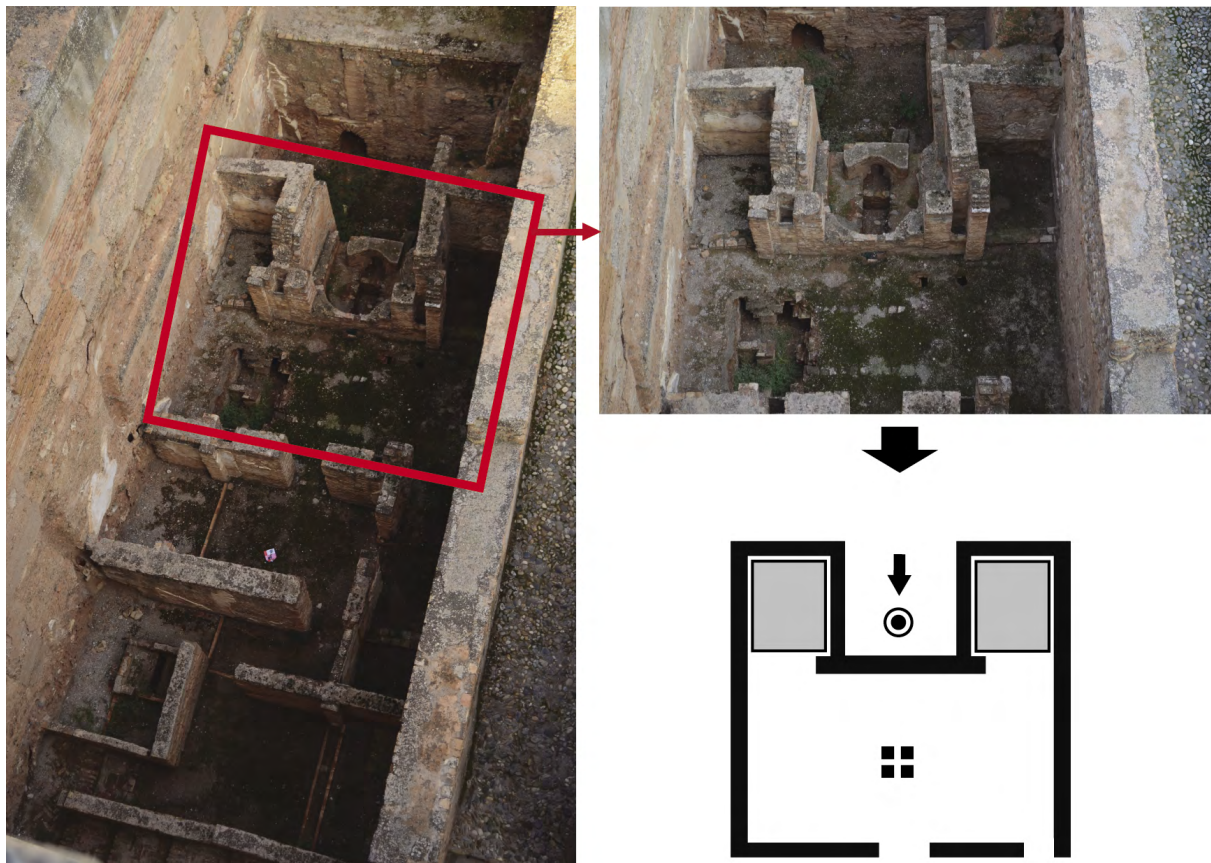


Figure 9. Alcazaba Hammam in Granada (Spain, eleventh century?) (photos and sketch by the author).

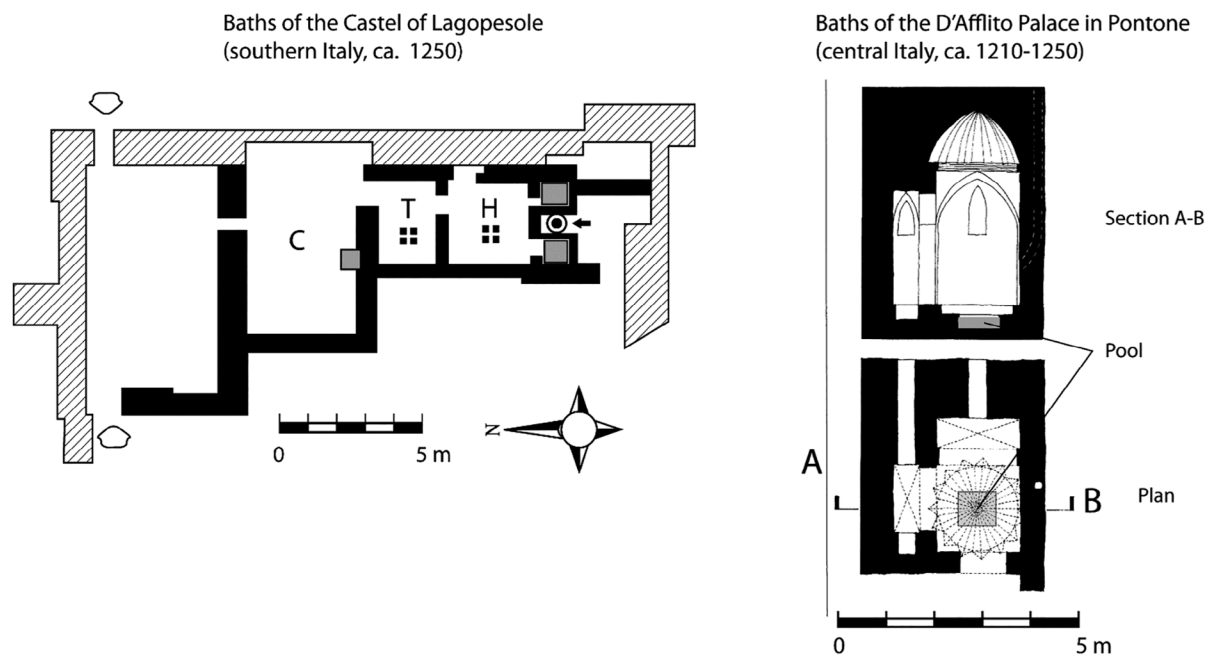


Figure 10. Plans of the baths in the Castel of Lagopesole (southern Italy, ca. A.D. 1250) and the D'Afflito Palace in Pontone (central Italy, ca. A.D. 1210-1250) (redrawn by the author after resp. Russo, “*Hamam oder Balneum*”, p. 286, fig. 26; Caskey, “*Steam and ‘Sanitas’*”, p. 177, fig. 12).

strong commercial ties with the East.⁶⁸ Here, the hot room, sometimes heated by hypocaust, was square in plan and covered by a dome (fig. 10). Just as in contemporaneous baths in the Byzantine Empire, this hot room had one or two single-person pools, sometimes opposed or perpendicularly placed to one another, and was preceded by a vestibule.

Whereas medieval hammams in western North Africa and al-Andalus still displayed the characteristic features of the late antique/Byzantine baths in Cyrenaica, contemporary hammams in the Near and Middle East, followed their own architectural evolution. Between the tenth and fourteenth century, the plans of the hammams in the East had evolved into a playful layout of interlocking curvilinear rooms and apsidal recesses (fig. 11).⁶⁹ The polycentric plan had two nuclei: a multifunctional cold room and a hot room with a central massage platform, both surrounded by smaller rooms for individual use. Pools

and hot water basins were rare.⁷⁰ With the conquest of North Africa, excluding Morocco, by the Ottoman Empire in the first half of sixteenth century, new architectural models of the hammams coming from the East also started to appear. In Algeria, the mid-sixteenth-century Hasan Bâshâ Sîdnâ hammam in Algiers had a large square hot room, covered by a dome, with a central massage platform and surrounded by several small alcoves to perform individual ablutions (fig. 11).⁷¹ Even though the ‘Maghrebi/Andalusi’ type would continue to exist, most new hammams were constructed following the new Ottoman design. In Morocco, on the other hand, these new polycentric plans never appeared, as the region was never conquered by the Ottoman Empire. To this day, the traditional hammam in Morocco shows the same characteristics as the Maghrebi/Andalusi examples of the ninth to fourteenth century. The hammam Moulay Idriss in the medina of Fez still has a hot room with two rectangular *exedrae*, one lodging a single-person pool, flanking the boiler room.⁷²

⁶⁸ Caskey, “*Steam and ‘Sanitas’*”.

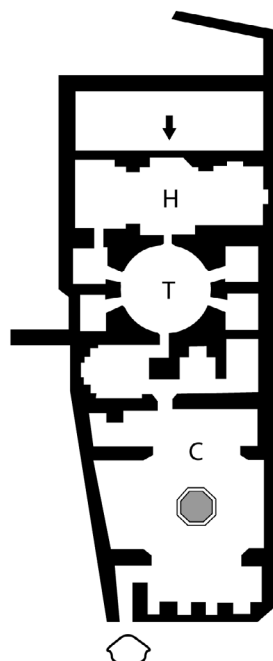
⁶⁹ Interestingly, the Ayyubid hammams in Damascus (twelfth century) still exhibited strong similarities to the Umayyad and Roman examples (rectangular hot rooms with an *exedra* for the pool), but also featuring strong influences of medieval Byzantine baths (polygonal rooms with several small alcoves), see Écochard, “Trois bains ayyoubides de Damas”.

⁷⁰ De Miranda, *L’Hamam nell’Islam*, pp. 69-70.

⁷¹ Cherif-Seffadj, “The Medieval and Ottoman Hammams of Algeria”, pp. 162-163.

⁷² Raftani & Radoine, “The Architecture of the Hammams of Fez”, p. 63.

Hamam as-Zan, Damascus
(fourteenth century)



Hamam Bâshâ Sîdnâ, Algiers
(sixteenth century)

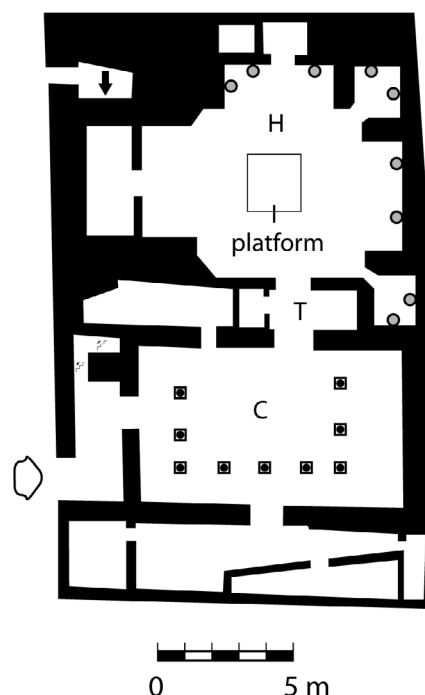


Figure 11. Plans of the Hamam as-Zan in Damascus (Syria, fourteenth century, plan without scale) and Hamam Bâshâ Sîdnâ in Algiers (Algeria, sixteenth century) (redrawn by the author after resp. De Miranda, *L'Hamam nell'Islam*, p. 76, fig. 50; Cherif-Seffadj, "The Medieval and Ottoman Hammams of Algeria", p. 163, fig. 8).

Conclusions

Our knowledge of the earliest hammams in Muslim North Africa is very limited due to the lack of archaeological and written evidence. It seems that some Roman-style public baths survived the initial Muslim raids, mainly because the Muslim rulers did not occupy or destroy the Roman cities, but merely levied taxes. In Cyrenaica, where the Arab occupation already took on a more permanent form in the earliest phases of the Islamic rule, it does seem that the Arab inhabitants made use of the existing bathhouses (*Cyrene*, *Taucheira*). It was also in Cyrenaica that a specific layout of the bathhouse, especially of the hot room, became popular during Late Antiquity, perhaps even introduced by the Byzantine forces during the 'reconquest' of Africa. The only confirmed early Islamic North African hammam, dating from the late eighth century and located in present-day Morocco, shows strong similarities in its design with the 'Cyrenaican' examples. The slightly later hammam of Āghmāt has a layout that is still reminiscent of this design. The type of *caldarium* may even have survived into medieval times, when it can be recognized in hammams in Islamic al-Andalus, which was, not

coincidentally, conquered by Muslim troops coming from Morocco. Perhaps then, the 'Cyrenaican' *caldarium* was a simple yet effective design, successfully copied by early Muslim architects, taking it with them to the new fringes of the empire, first to Morocco and then to the Iberian Peninsula. Even if there is a considerable time gap between the late antique baths of Cyrenaica and the (early) Islamic hammams in Morocco and al-Andalus, it is perhaps not entirely impossible that a 'successful' design in bath architecture survived for several centuries. Other examples of such longevity are known, such as the *caldarium* with two semi-circular *alvei* on opposite ends of the room. This design was already used in third-century Roman baths (e.g. Brad, fig. 1) and was still popular five centuries later in early hammams (e.g. the hammam in Qusair Amra, fig. 1). Unfortunately, the number of documented early hammams in North Africa is still too limited at this point to map the spread of the 'Cyrenaican' *caldarium* through North Africa and perhaps to al-Andalus. Nonetheless, the differences between the modern day hammams in the Maghreb, Egypt, the Mashreq and Turkey indeed confirm that the evolution of the Islamic public bath followed different trajectories, adopting

local Roman-Byzantine building schemes and gradually adjusting them to the Islamic bathing preferences.

Most modern scholars now agree that the Islamic baths can be roughly subdivided in three groups, based on their plan and architecture: the Eastern type (Turkey and the Middle East), Western type (Maghreb and al-Andalus) and the Egyptian type, incorporating elements of both.⁷³ It has been proposed that the Western type found its origin in Morocco, was then ‘exported’ to the Iberian Peninsula during the conquest and then influenced hammam-design in Sicily and North Africa through the exodus of Andalusí architects. However, based on the present study, we can also propose a different trajectory, in which the ‘western’ type actually originated in late antique/Byzantine Cyrenaica, the early Islamic hub from which most of North Africa was conquered, and then travelled westward together with the conquering forces to Morocco and even later to the Iberian Peninsula. The examples of ‘western-type’ hammams found in North Africa during the Medieval period would then not only be the result of strong cultural ties with al-Andalus, but also a continuation of a basic design that had already been present since the first stages of Islamic conquest. The diplomatic and cultural links with al-Andalus may have introduced new forms of this old bath design to North Africa, exemplifying a process known as cultural circularity⁷⁴, in which a cultural element (i.e. a bath design) from region A (North Africa) is exported to region B (al-Andalus), undergoes local alterations and then returns to region A to become popular here again.

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⁷³ Navarro Palazón & Jiménez Castillo, “The Islamic bath”, p. 337.

⁷⁴ Burke, *Cultural hybridity*, p. 26.

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