



## **ROMAN NYMPHAEUM IN PHILADELPHIA, SOUTH LEVANT: NEW EXCAVATION DATA**

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### **ABSTRACT**

The Nymphaeum structure is considered one of the most important historical buildings still standing in the heart of Decapolis City Philadelphia (Modern Philadelphia Capital of Jordan, Amman). The Nymphaeum has been dated to the second century AD, during the Roman period consists of two floors: a ground floor which was built above an old water course; and the second floor consisting of three large apses decorated with two rows of niches designed to host statues. The structure remained in use into the late Byzantine and early Islamic periods. The current paper highlighted new discovered architectural features at the Nymphaeu. These new features have added a number of facts regarding the building techniques and materials as well as the site function and its uses.

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**KEYWORDS:** Amman, Nymphaeum, new excavation report, Roman, Byzantine, Islamic, building techniques

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## INTRODUCTION

The kingdom of Jordan came under the control of the Persian satrap, with subordinate governors, after circa 500 BC. Persian rule came to an end when the region was conquered by Alexander in 332 BC and shortly thereafter came under the control of dynasties founded by his generals, first the potencies from Egypt circa 301-198 BC and later the Seleucids from Syria circa 198-63 BC. Amman was incorporated into the Roman Empire when the Roman general Pompey conquered Syria in 63 BC (Hoed 1954:35; Jones, 1979:158).

The Romans constructed many buildings in Amman and named it Philadelphia during the second and third century AD. Some of these buildings are still standing today, like the Citadel, Roman amphitheatre, and the Nymphaeum.

The site of the Nymphaeum is situated in the lower city while the citadel is considered the upper city. From 1996 to 2002, comprehensive archaeological excavations were conducted in the Roman Nymphaeum under the direction of the author. This was the first excavation conducted in the Nymphaeum which represented the first attempt to document this focal building in ancient Philadelphia.

The four main objectives of this research was to: 1) study the architectural remains of the structure in comparison with similar buildings in Jordan and nearby countries; 2) save the building from threat of destruction caused by the rapid development in the center of Amman; 3) investigate the function of the building to determine whether it was used as a Nymphaeum or a monumental structure during Roman times; 4) to develop the site as a visitor and tourist attraction.

## THE STRUCTURE

The Nymphaeum structure was an elaborate and monumental structure built over a cave or grotto with a running water source sacred to nymphs (Yegul 1992: 492). It usually had one or more rows of niches, orders and statuary, rising behind a basin. These Nymphaeum structures have been found in major classical cities such as Tipase, Olympia, Ephesus, Lepcis Magna, Jarash and Philadelphia (Macdonald, 1986: 103).

The name Nymphaeum (according to Pierre-Adam) is given to ornamental fountains. The muses, the river gods Narcissus and Pan, were also found in these places. The Romans found inspiration in installations laid out by the Greeks, such as the Pirene fountain at Corinth, the largest ancient Nymphaeum still surviving. The Romans reconditioned the fountain, giving it a monumental facade overlooking a vast basin (Pierre-Adam, 1994: 237-238).

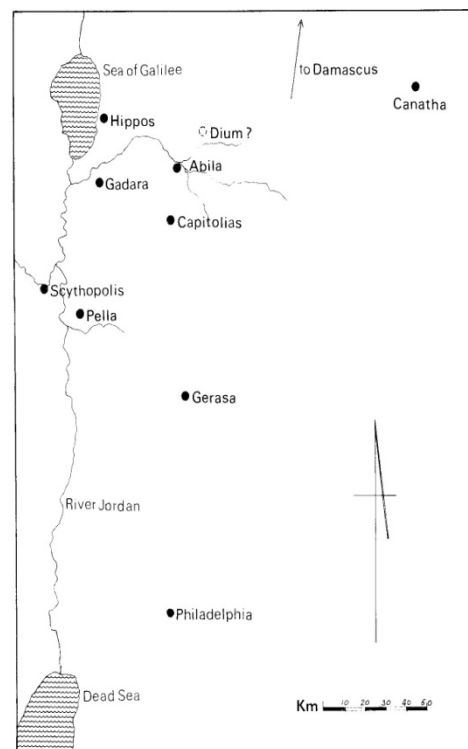


Figure 1. Map of the Decapolis Cities in Jordan

In the center of Philadelphia, approximately 200 meters to the west of the theatre on the south side of the decumanus Maximus, and very close to the point where the cardo intersects with the decumanus, are the remains of a wide façade, preserved in poor condition (Hadidi, 1970: 79). The history of Philadelphia and the topography of the structure, which is one of the most finely decorated monuments in the city, suggest that it may have been a water structure, evidently an important asset to the city of Philadelphia.

This structure was identified as a bath by Conder (Conder, 1889: 41), a public building by Burckhardt (Burckhardt 1822: 358) and Merrill (Merrill 1881:400), and as a Nymphaeum by But-

ler (Butler, 1909: 59). It was compared by Hadidi to the Nymphaeum at Jarash (Hadidi, 1978:216), and was also visited by Robinson (Robinson, 1837: 174) and Seetzen (Seetzen, 1854: 396).

The structure is in the lower city which follows a typical Roman plan. There were two colonnaded streets along the major valleys of the city. The first street started from what is now the Raghadan Bridge to the east of the Hashemite plaza and extended west, passing by the Municipal Library, and continued past the Great Husayni Mosque, ending near Ras al-'Ayn. The second street started from a point on the first street near the area of the Husayni Mosque, along the line of King Hussein Street up to the modern building of the Central Bank.

## THE ARCHITECTURE

### *Ground Floor*

The Nymphaeum structure was in use over a long period of time, and clearly must have had a phases of construction history as follow: (Fig 2).

**Phase one:** the arch system which dated back to Early Roman Period depending on datable recovered materials such as pottery, coins and way of construction. While phase tow represents the building of the first floor with its distinguished large 3 apses, the pottery and architectural analysis prove the new techniques during these phases.



Figure 2. Part of the excavated area of the basin and the courtyard.( Waheeb, 2000)

The dating evidence for the original construction can be principally seen in the details of the ground floor arches. Although the natural topography of the area on which the structure was built is not fully known, the height of the bedrock does seem to have varied considerably. The Nymphaeum itself was built on an area that

sloped down to the southwest; in this case a series of vaults would be essential so as to enable the water to pass underneath without causing any destruction. These vaults would also act as a passageway.

As a passage way, the Romans constructed a road across the shallow wadi in order to facilitate the movements of the people using the arch principle. Four medium sized and one large arch that were constructed at the site can be clearly noticed. These features suggest that the original construction was completed by erecting these arches, which represent the second phase of construction site. There are three arches, the entrance being number one, the arch has a joint at the midpoint, and there is not a key stone, the same for the second arch. The passage is enlarging as it advances to the inside. The second arch has a joint at the midpoint, and no key stone, and it has two centers for construction. Same structure can be diebled for the third arch. On the other hand, the fourth arch has a key stone with center above the springing. This arch is not of the same construction as the former one and representing the early phase of construction. So the Nymphaeum construction was developed by adding arches with joints at the mid-point to the existing arches with key stones so as to enlarge the foundations to build the first floor of the Nymphaeum building.

Above the arches is a set of niches, each measuring 1.25 m in width and rising about 2.10m high to the level of the platform of the colonnade. Eleven niches were uncovered above the arches up till now.

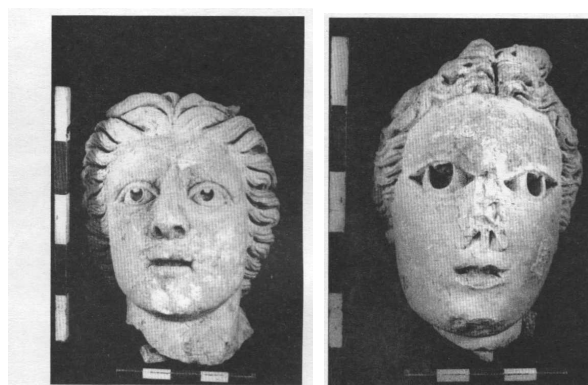


Figure 3. Two heads of human statues discovered during the excavation (Waheeb 2000).

Excavation of the lower parts of the structure was hindered by the problem that the deeper the excavation probed, the more forceful and active the flow of water became. The excavators worked hard under extremely difficult conditions in order to lower the water level sufficiently to achieve some progress in excavating the lower parts of the structure.

### *First Floor*

The dimensions and architectural elements of the existing structure indicate that the building was truly a public monument. Based on early descriptions, it is a half octagon of large proportions, with a restored length of 68 m and consists of three large semi-domed apsidal recesses, each flanked by two tiers of shell niches, four in each tier. The width of each of the small niches is 1.25 m. The niches must have originally housed the statues.

Each of these apses is supported by two square buttresses which project from the corners of the apses. The height of the apses is around 12 m. From the available architectural features, it is clear that the great central apse was set upon the axis of the original structure<sup>1</sup>.

The wing limits of the colonnade are not known. Excavation did not extend far enough to the northeast! Southwest, so part of the wings is still buried under modern buildings, despite the removal of the upper courses of these wings, during late periods.

At this stage the colonnade was only one storey high. Its practical function was possibly to

shelter the spaces, as well as to provide a place for people to walk and rest away from sun or rain. It also served an aesthetic purpose, reflecting Roman architectural conventions and making the interior of the structure less austere.

Little of the columns were found: chiefly a few bases, drums and capitals. The large Corinthian columns which had been earlier installed to give a grand view to the building severely suffered from earthquakes and destruction. Their overall height of approximately 10 m corresponded closely to the height of the large apses in the first storey.

Despite Conder's (Conder, 1889: 41) description of the building, which was sufficiently well preserved at the time of his visit, it is clear that the angle of the platform wall and the corresponding angle and foundations on both ends would reconstruct a third apse where the foundations revealed an extension toward the west under the modern street (Quraysh Street). According to the symmetrical system of Roman architecture, this made a balance to the east side of the central apse.

The Basin and Courtyard Prior to excavation, the only architectural features visible in front of the structure were tumbled stones, and modern private houses occupied the whole area of the courtyard. Excavating this area revealed the presence of a large water basin, no close photographs of which could be found among the collections taken by the early travelers.

The basin was partly excavated, revealing about 26 m east-west and 15 m north-south. It is situated in the northwestern part of the structure in front of the northern apse. This asymmetry may be a result of errors during construction or an intentional violation of the principle of symmetry. The stone pavement of the basin rested on a surface consisting of lime carefully prepared of rubble stone and dark, ashy mortar, which resembled the bedding cement of the Roman period construction noted elsewhere at the site. The architects at Philadelphia during that period did not use sophisticated measuring, and local geographical features may have caused deviation from theoretical symmetry since the basin was built over slightly raised ground close to a water source, indicating that the basin could be flooded and used for aquatic

<sup>1</sup> Two limestone heads were recovered through the excavation; Fig. 3. the two sculptural heads were very interesting; the unusual form and style refers to its functions during the Roman Period, both of them were found broken and reused in building recent walls in the courtyard of the Nymphaeum. The style and technique of carving reflects the high standard of skillful work, especially the carving of the eyes, hair, and nose; the eyes were decorated with precious material but unfortunately were not found during the excavations. It is clear from the measurements of the two heads (the rest of the body was missing) that they do not fit the niches of the building. Small niches were usually adorned with statues, especially of citizens who rendered distinguished services or helped toward the expenses of construction. The original source of the two heads still needs clarification to understand its importance to Roman Philadelphia.

performances. Although there is no evidence for hydraulic mechanisms in the Nymphaeum building such as water channels and pipes, the fact that the Philadelphia Nymphaeum was situated so near the water supply suggests that

the intention may have been to be able to channel water into the basin. Whether or not this was actually the case cannot be determined from the present evidence.

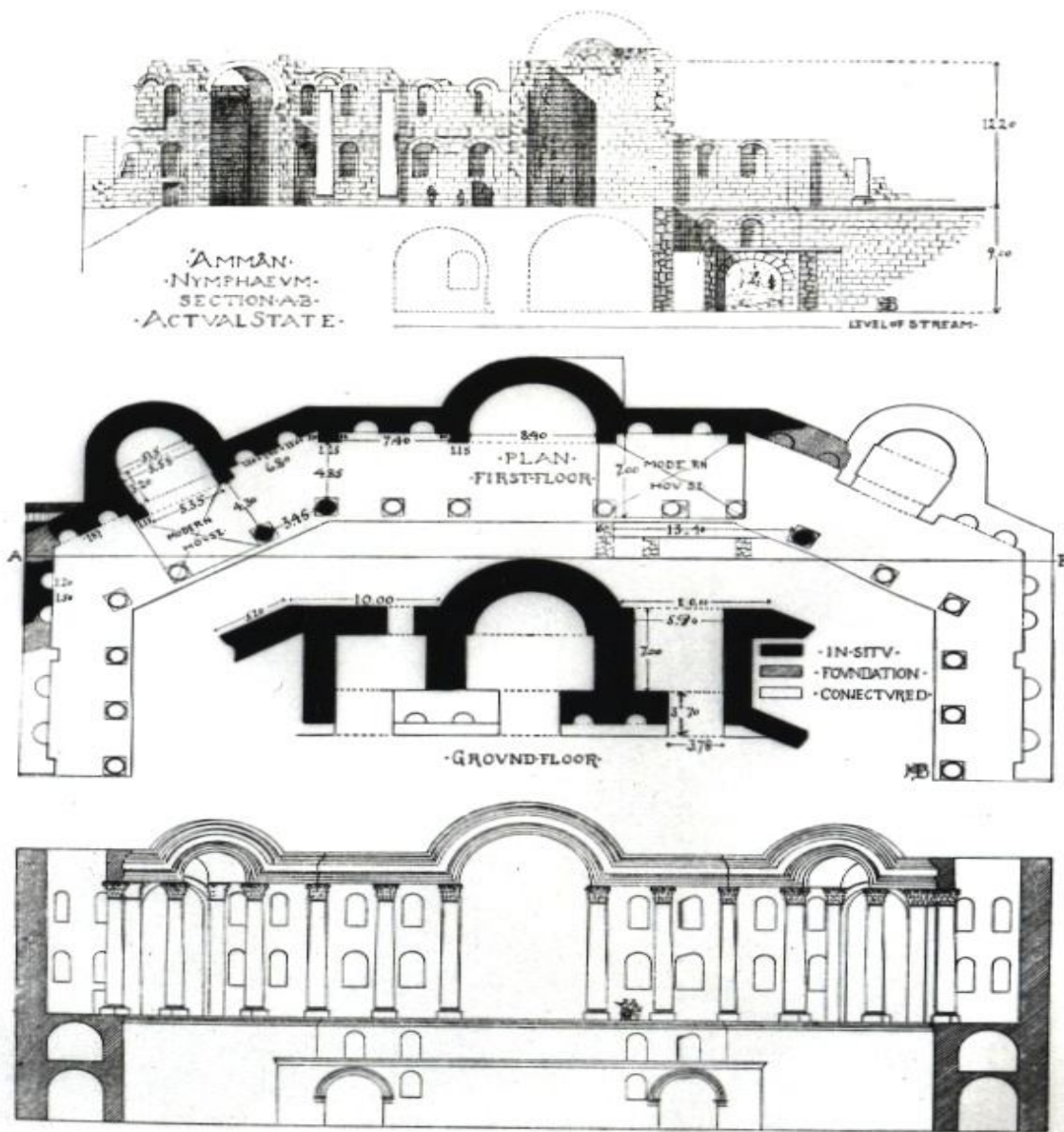


Figure 4. Plan of the ground and first floor. Drawn by Butler expedition (Butler 1909).

A large paved courtyard surrounds the basin from the east and southwest. The purpose for the enlargement of the courtyard presumably was to provide additional space for ecclesiastical personnel or benevolent activities of the Nymphaeum, thus the courtyard probably served as a forum-like plaza in front of the Nymphaeum. What supports this idea is the further open space here, already cleared by the on-going excavation, and it is a logical find since the Nym-

phaeum is set back from the line of the decumanus. The construction of the courtyard and the basin can be dated by inference to the same phase as the building of the first floor structure. There is a staircase located in front of the central apse leading up from the courtyard to the first floor platform. For the present, this represents the main entrance located — as would be expected — in the center, according to the symmetry theory. The door is 0.90 m wide, flanked by

two small roughly made niches, each 1.20 m wide.

The stones of the jambs were not decorated or pitted with cramp holes for fitting the marble, as they were a later addition. The lintel was either robbed or fallen. It is reasonable to suppose that this door was intended for public use.

### The Roof

Depending on excavation results and field assessment of the architectural remains, the entire upper portion of the building had disappeared prior to the earthquake of 747 AD, except for the northern apse which is still partly *in situ*. The northern apse shows that the apses were terminated in semi-domes, which probably collapsed in the earthquakes of 631, 641 or 659 AD (Amiran, 1950: 226), and the stones were removed.

Depending on Butler's interpretations referring to the middle area of the structure with its columns and arched central intercolumniation, was covered by a double pitched roof (Butler, 1909: 58).

These tiles were found rested on the floor of the northern apse and clearly fallen from the roof as a result of deterioration and earthquakes. The examination of these tiles through comparative study of similar Roman roof tiles discovered in Decapolis cities in Jordan proves that these tiles were identical roman nymphaeum tiles.

Many broken ceramic roof tiles, these tiles were found rested on the floor of the northern apse, and clearly fallen from the roof as a result of deterioration and examination of the tiles with comparative study earthquakes, of the Roman types discovered in Despoils with proves that these tiles were used in the building were found throughout the excavations. The fragments represented only a small portion of the tiles that would have been required to roof the structure, and it must be supposed that, following the earthquake of 747 AD, most of the unbroken tiles were carried away.

The columns in the structure supported architraves, but there is little archaeological evidence for that. Some of the architrave pieces were reused later in the Umayyad walls in the courtyard of the Nymphaeum.

Conder's, Merrill's and Butler's photographs and sketches show partly preserved columns in front of the apses, which indicate that there was originally a colonnade that ran parallel to the four sides of the façade at a distance of 4.5 m from it. The intercolumniation of the colonnade is 3.5 m and its order is Corinthian, judging from three fallen capitals which were found in front of the building and which were reused in building the Islamic walls (Fig:5) (Waheeb, forthcoming).



Figure 5. General view of the Nymphaeum in 1867. (Palestine Exploration fund 1867)

A few fragments of a crude column (0.90 m in diameter) slightly smaller than the columns of the exedra, along with some bases and Ionic capitals resembled columns found reused in Umayyad walls and Abbasid rooms. The shafts of two columns of green chiorotic limestone, very likely from another building, were found in the courtyard. Just one column in front of the northeastern apse and the lower drum of the southwestern wing is known to have existed now on the platform. These decorative elements were found fallen in the courtyard in front of the facade of the structure. Similar decorative elements were noticed elsewhere in the nymphaeum buildings in the Decapolis cities such as Jarash, north of Jordan.

### ARCHITECTURAL DECORATIONS

The interior walls of the Nymphaeum and the lower parts of the three large apses and the small niches are fitted with round and square holes sunk in the stones. Holes for attachment clamps can be seen, these attachment clamps were of bronze so as to fix marble for casing the interior. Occasionally some clamps were found

still embedded in the lower parts of the Nymphaeum walls.

The revetment was set in a thick mortar (0.5 cm) consisting of common grey ashy cement. Numerous marble fragments were found in areas A and B, but little was found in C and D, these varied slightly in appearance, ranging from a light grayish-white to reddish, light dark, blue and green.

Only a few fragments of decorative elements were found during our excavations. It is clear that the range of patterns employed in the building is quite wide, consisting of floral and geometrical designs, reels and beads. Blocks with decorative moldings in shallow relief were also used. These decoration elements were found fallen on the courtyard in front of the Facade of the structure, similar decoration element were noticed elsewhere in Nymphaeum buildings in Decapolis cities such as Jarash in north Jordan.

Most of the decorative elements are missing, presumably either because the columns collapsed and the stones were crushed or they were robbed during the last century. Judging from the available fragments, it is difficult (at this stage) to determine where they originally stood.

### *The Pavement*

The area surrounding the Nymphaeum was leveled by a fill as high as the crown of the ground floor arches. Evidently, great effort and expense were made to bring the paved courtyard of the Nymphaeum up the slope of the wadi and maintain it at one level, especially the extension toward the colonnaded streets which is the most active part in the entire city during that time. Further, the evidence from the writings of the travelers during the past century indicates that, originally, both sides of the stream beside the Nymphaeum were kept at a level surface extending from the decumanus Maximus to the steep hill on the south side of the stream (Merrill, 1881: 400) stated that the natural bed is rocky, and the stream itself south and southwest of the Nymphaeum was covered with a series of barrel-vaults and paved. It is clear that the stream, in portions at least, was covered and the space above leveled and paved. This of course includes the area where the stream passes southwest and south of the Nymphaeum build-

ing. This would have added a great deal to the beauty of the building. The paving above the barrel vaults of the stream did not only protect the water from contamination and pollution but also provided extra space between the decumanus and the southern quarter of the area of the Nymphaeum. Unfortunately, the remains of these vaults and pavement have disappeared and we relied on old photographs which reflect in part the beautiful and ingenious works of Roman engineering.

The basic kind of paving which was found at the Nymphaeum in the basin and courtyard area consists of stone pavers of varying dimensions placed in rows with their long sides parallel to the basin walls. The paving consists of white lime flagstone ca (1.50 cm long 0.88 cm wide). These pavers were largely robbed out after the basin and courtyard area was abandoned. All that is left is the ashy grey cement bedding, except were fallen architectural stones had crushed the slabs and made them useless to robbers.

### *Water System*

The water sources of the Nymphaeum have to come from a higher source, particularly if the city itself is built on high ground. The structure as a part of Philadelphia's buildings lies at the lowest point in the city beside the main wadi that drains the surrounding hills. In the center of the city the main wadi flows southwest-northeast. According to Saleh (Saleh 1980) on the north is a tributary wadi which splits into two. This is named on the Palestine Exploration Fund Survey as "Misdar elMadheneh". The eastern branch is today occupied by as-Salt Street and the western by Wadi as-Sir Street. The two wadis met at the point where the Roman monument was erected. To the east is a second tributary wadi on the north side of Wadi al-Haddada, which curves around to the west. Conder (Conder 1889: 40)<sup>i</sup> added that the waters of the tributary valley "Misdar el Madhenehran running through the buildings in winter to join the main stream. The Romans often brought water over considerable distance to cities, towns and buildings through aqueducts from higher points (Hodge 1992:68).

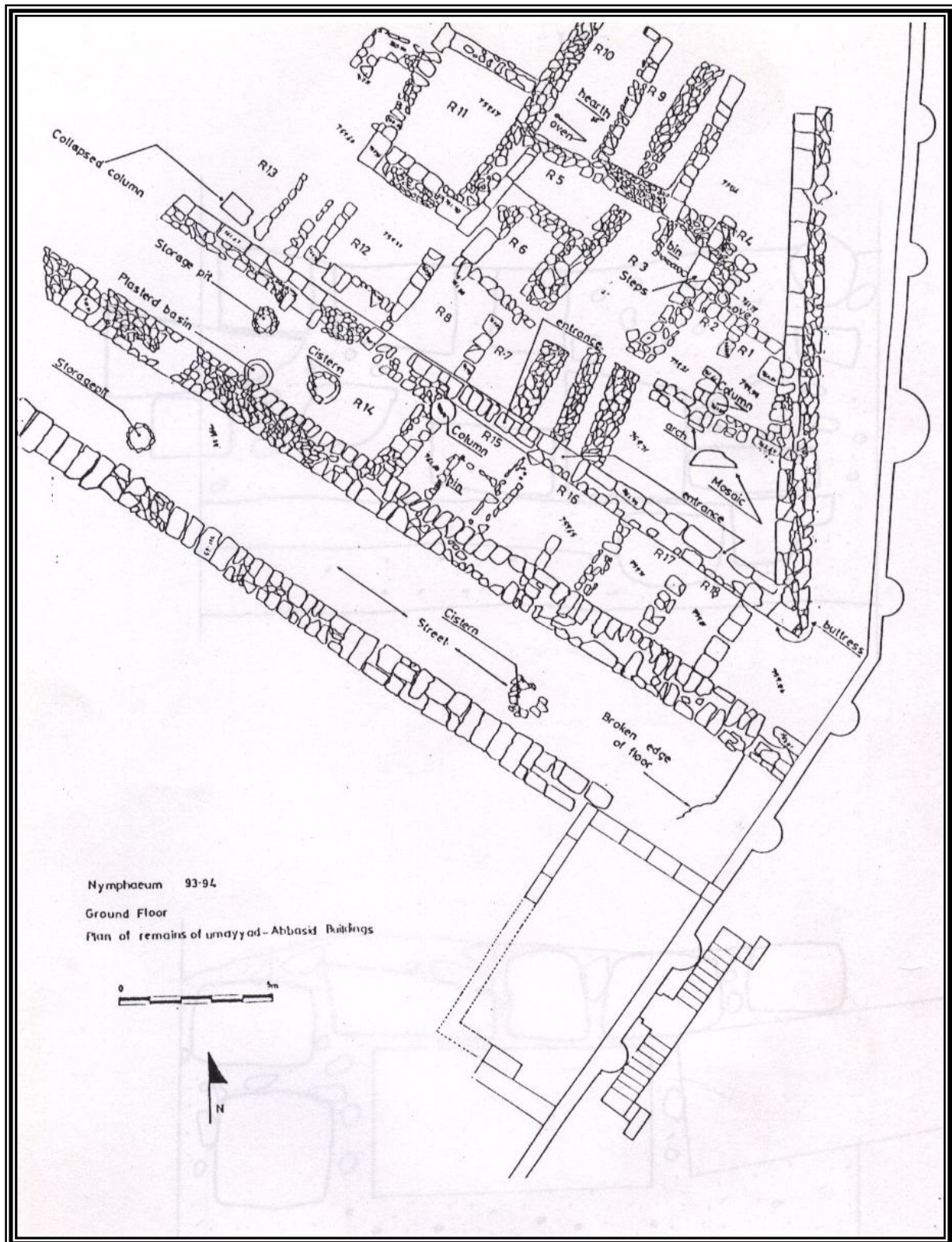


Figure 6A. The plane of the Nymphaeum pavement (Drawn by Sofenaz kabajah 1994)

Water from the highlands of Jabal al-Qala'a, al-Jofa, al-Luwaibida, and other hills flows through porous limestones layers and emerges

at the foot of the lower city plateau on which the Roman Nymphaeum was built.



The waters brought by the aqueducts were distributed to different parts of the city from special distribution tanks. The Philadelphia Nymphaeum occupied an important position among the various public establishments and possibly was served directly by a main line from a tank or a branch from an aqueduct, which is suggested by the observations of travelers during the past century and can also be traced through the archaeological evidence. A major reservoir was necessary for the collection and distribution of water.

The aqueduct would carry water from Ras al-'Ayn and other springs to the central city, especially to the Nymphaeum building with its basin. Utilizing the topography, the engineers channeled the water down the sides of Wadi Philadelphia, splitting it on the slopes into multiple pipes to reduce the pressure (Wheeler 1964: 149).

A clear evidence of Roman aqueducts comes through descriptions from the last century. Conder (Conder 1889:39) mentions an aqueduct which runs parallel to the stream on its north side. "This was traced as far as the Moslem baths north of the mosque (al-Husayni); but it may have been first constructed in the Roman period for the supposed Roman baths east of the mosque. The present wall is of small irregular masonry, the stones about 15 inches by 9 inches. The channel is about 2 feet wide, and is fed from the spring of 'Ayn Philadelphia. Two side-channels 3 feet deep, lead out south to little water mills".



**Figure 6B:** View of the Nymphaeum from the south east (Conder 1889).

The Roman aqueduct that was used to bring running water to the central part of Philadelphia was also mentioned and described by the local people of Philadelphia before 1948. It was called

(al-qanah arRumanieh) which means the Roman Aqueduct. The aqueduct started from Ras al-'Ayn. It was built of white slabs of limestone. It measured 1 m high by 1 m wide with siphons located at regular distance above the aqueduct for checking and cleaning purposes. It ran alongside the lower parts of Jabal Philadelphia reaching the point just opposite al-Husayni Mosque, where a huge reservoir for water distribution was located (Rasheed 1983: 83). These reservoirs or water tanks were demolished by rapid modern developments of the city center during the last two centuries

Some water pipe fragments mixed with Roman pottery shards of the second century AD were discovered through the test sounding beneath the courtyard pavement of the Nymphaeum. These represent part of the early water system of the Roman Period at the site before the construction of the courtyard.



**Figure 6C.** Modern picture showing the rear wall of the structure and the courtyard (Waheeb, 2000)

It is worth mentioning that more water is expected in winter due to rain water running down the slopes of the surrounding valleys like Dhr Umm as-Swaywina and 'Abdoon (Fawwaz 1986: 14), in addition to the running water from the steep hills of Jabal Nazzal and al-Ashrafiya (Hmoud 1994:32; Hamoudah 1969: 17). Modern construction works adjacent to the Nymphaeum revealed the presence of a spring beside the southwestern wing and another one located beside the northeastern wing of the Nymphaeum building, which means more evidence for the interpretation of water usage in the structure. (Fig: 6A, B & C and Fig. 7)



Figure 7. Close view of the semi arch from the southeast of the Nymphaeum. (Hadidi, 1970)

Until now there is no indication to rely on, the whole facade of the Nymphaeum severely suffered from destruction through the ages.

## DISCUSSION AND CONCLUSION

Large-scale buildings rising high above their surroundings were common-place, and the frequency of their appearance in small places is striking. The Nymphaeum structure was made large and we are probably safer simply to stick with the generalization that such a structure, even without clear function, could be a monumental building. In the absence of inscriptions or literary references, the date of the construction of the Nymphaeum can be determined only by an examination of stratigraphic evidence and stylistic criteria. An undated Greek dedication to the Nymphs and Muses must honour the benevolent spirits associated with the Nymphaeum was discovered near the theatre (Gatier 1986: 38).

Another inscription mentioned a public bath (balneion) and a quadruple portico (tetrastoon) built around 150 AD (Gatier 1986: 42). A rescue excavation conducted east of the odium where the bath was suggested, but according to Northedge (1992: 58) it was a colonnade enclosing a second forum-like plaza in front of the Nymphaeum. However it is clear that the reconstruction work is closely associated with the original building plan and use of the structure, and thus should be close to it in date. As for the ground floor (the arches) the simple molding suggest the early Roman period supported by the pottery sherds and few coins that had been found

in the site. On the basis of this evidence the date of the construction of the great monument would seem to have been in the latter part of the second century AD early third century AD, perhaps during the flush of prosperity. Almost certainly other contemporary structures in Roman Philadelphia (such as the theatre and the odium) were built as a part of a remodeling of the lower city in the second century AD.

Those structures which can be closely dated all belong to the second half of the second century. The Nymphaeum may well be of similar date. In Jordan different structures were described as Nymphaeums: Petra (Browning 1982: 145-136, Fig. 18A, Map 4), Pella (a Nymphaeum is depicted on several of the coins of Pella dating from the early third century AD; McNicoll 1992: 122) and Umm Qays (Kerner and Hoffmann 1993: Fig. 5).

The Jarash Nymphaeum was built in 191 AD (Hadidi 1978: 216) but this structure is different in shape and dimensions from the Philadelphia building. In contrast to its neighboring Nymphaeum this structure, presumably local in origin, has understandably caused this building to be characterized as essentially eastern. This work is imperial and was built when different artistic forces from around the Mediterranean were beginning to coalesce. No doubt this is correct with regard to architectural carving and certain features of design, but other architectural features may seem rooted in western practice.

Philadelphia, as originally planned, conformed to Roman tradition in having a main street traversing the entire town, gate to gate. The result, a flowing chain of thoroughfares linking the principal buildings and squares, made up the skeleton of an armature of avenues and public spaces and their adjoining public buildings.

It is appropriate to consider the kind of activities that may have been carried out in this structure, whether this structure represents a true Nymphaeum since it included a water basin and niches for statues or it was a monumental structure slightly different from the well known style Nymphaeum. In general the form of the building does not necessarily reflect a narrow range of function, and our preliminary assessment

suggests that the remains represent a unique monumental structure at Philadelphia.

A close parallel to the Philadelphia Nymphaeum was located at Philippopolis (Shahba) in Syria representing an imperial monument (Le sanctuaire imperial de Philippopolis) (Amer and Gawlikowski 1985:5).

The unique monument of Philadelphia deserves not only preservation and conservation but some degree of aesthetically and archaeolog-

ically appropriate development so that it can become again, like the Theatre and the Odium, a focal point of Roman Philadelphia in downtown Philadelphia. The proposed work needs not only a comprehensive conservation and management plans for the discovered site but also a detailed interpretation schemes that describe the speciality of the site and its features within its current landscape.

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