

Notes on Urban Planning, Landscape and Architecture of Nabataean Petra Paradigm

Naif Adel Haddad

ABSTRACT

Hellenism was a real cultural force in Nabataean Petra's urban planning and architectural products. Petra is a paradigm of our knowledge of how the Nabataeans designed and built their urban settlement. In approaching the city, one immediately notices how they planned the city to maximise and take advantage of the accessible majestic landscape topography. They created an extraordinary metropolis in the city centre and the surrounding sandstone mountains. There are many aspects of the particularity and creativity of Nabataean culture during the Hellenistic and Roman periods. In the Nabataean Petra paradigm, we can observe the following: cultural interaction, cultural interchange, cultural exchange, cultural adaptation, and cultural sharing, which acted as cultural links between the peoples of the east and west. Thus, creating a new expression and direction of the cultural sharing between the East and West. Metropolitan cities, as in the case of the Nabataean Petra, are focal points where these changes and their effects are experienced significantly. This paper attempts to shed light on the functional, structural, typological, and morphological conceptions and aspects of the urban development and architecture of Nabataean Petra, particularly in the public spaces of the city centre and the surrounding tomb architecture. It argues that this development and formation was the expression of the highly developed self-image of the citizens of Petra reflected in its urban planning, landscape, architecture, and cultural significance.

Keywords: cultural interaction, environmental and climatic conditions, Hellenization, hydraulic engineering.

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N. Adel Haddad *

Department of Conservation Science,
Queen Rania Faculty of Tourism and
Heritage, Hashemite University, Jordan.
(e-mail: naifh@hu.edu.jo)

**Corresponding Author*

I. INTRODUCTION

Petra and its surrounding area have been inhabited for over 10,000 years since prehistoric times. Dating from the fourth millennium BC, the Chalcolithic mining sites at Umm al Amad (copper mines) and the underground galleries are outstanding examples of mining structures in the Petra area. Meanwhile, the Neolithic remains of the settlement are evidence at Beidha, in addition to the Iron Age settlement on Umm al Biyara. However, the city's main attraction is the Hellenistic Nabataean capital caravan city, the significant crossroads between Arabia, Egypt and Syria-Phoenicia. The Nabataeans' territory (4th BC – 2nd AD) was wedged between the Hellenistic Ptolemaic Egypt and Seleucid Empire.

The more significant part of ancient Petra is still unexcavated. Nevertheless, each structure excavated at Petra has added to our knowledge of the Nabataean civilization's achievements, city planning and architecture. Recent discoveries and literary sources are pointed out and suggest that the advanced state of Nabataea must be dated a generation earlier than it was previously thought (mainly in the Augustan era). These sources suggest a well-organised state in the early Hellenistic era centuries earlier (Graf, 2006, p. 68., Graf, 2009, p. 73). Graf (2009), even suggests that the Nabataean had a well-established urban state at Petra before the hypothesised dramatic transition in the first century BC. Unfortunately, the archaeological records still offer minimal support for the tremendous Hellenistic era's literary and epigraphic finds. The principal remains are of the influence of Greco-Hellenistic and Roman civic planning and architecture; these are the Tombs, Theatres, Nymphaeum, and Baths with their installation systems, Collonaded Street and triple-arched entrance gate, the Market, and the Temples (Fig. 1, 2). In addition, the city preserves some of the later Byzantine remains, including the triple-apses Basilica church and the church created in the Urn Tomb, and the traces of the Crusader fortresses of Habis and Wueira and the mosque's foundation on Jebel Haroun, the traditionally the burial place of the Prophet Aaron. All these together bear an outstanding view of long ancient times and continuance periods of these civilisations in the Petra area.

However, religion was a significant component of Nabataean life. The dead were worshipped as the central part of Nabataean religious ceremonies. The sepulchre was crucial to the Nabataeans, who conceived it as a "house of eternity" (Negev, 1971, p. 52). Unfortunately, the lack of Nabataean text of

religious nature prevents us from reconstructing the beliefs of their society in detail, especially those concerning death. Meanwhile, archaeological remains provide clues (Sachet, 2009, p. 98). Interestingly, the aqueducts' water supply crosses the Necropolises (funerary complexes) before reaching the houses in the city centre. One of the most aspects of the Nabataean rock-cut façades is their dealing with seasonal rainfalls. The exposed rock-cut façades to water erosion protection were achieved through water drainage channels installed on or curved on the top or behind them. In order to prevent these façades, the Nabataean applied two primary essential means:

1. Façades were covered by stucco (and sometimes painted).

2. A system was devised to prevent rainwater flooding from reaching the façades; thus, some monuments are cut well back into the same block of rock to avoid water gushing down from the valley as in the case of al Khazneh, meanwhile others are cut out of the rock (al Deir, Palace Tomb, and Soldier Tomb). In this exposed façade case, the protection was achieved using water drainage channels installed on or curved on the top or behind them (Schmid, 2002, p. 349). Therefore, they should constantly be monitored, maintained, and cleaned. In addition, these drainage systems should be reconstructed to make the water drainage system work again to protect these façades. Regular maintenance of these installations would be necessary because the strong roots of the different plants which grow there endanger the soft sandstone and the canalisations.

To conclude, the capital Petra of a mercantile Kingdom, for frankincense and myrrh from southern Arabia, was an exceptional phenomenon combining as it did both functions of the Nabataean capital with its famous trades and national necropolis (Segal, 1997, p. 80). Their trade network and financial services enabled the engineering of waterworks that captured flash floods using stone culverts and clay pipes and directed flows to massive underground cisterns. In addition, Petra is also a city devoted to unique architectural concepts based on its landscape, tombs, and the remnants of the diversion dam, tunnel, water channels, aqueducts, reservoirs, and cisterns. These are outstanding examples of Nabataean water engineering dating from at least the late Hellenistic first centuries BC to AD.

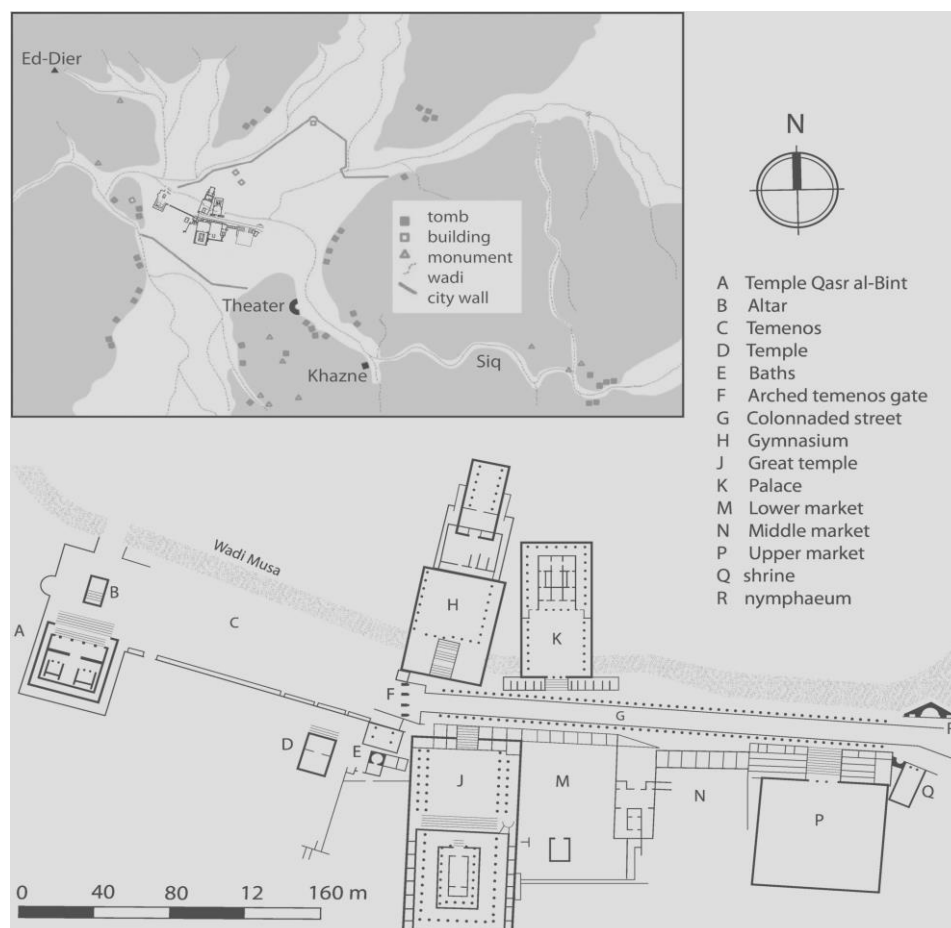


Fig. 1. Plan of Nabataean Petra city centre shows the main structures within the collonaded street and the central city with the principal monuments. (After <https://www.cambridge.org/core/books/abs/romanarchitecture-and-urbanism/roman-near-east/41CBB5AAAB20C2A2BB0EB01F7671145B>).

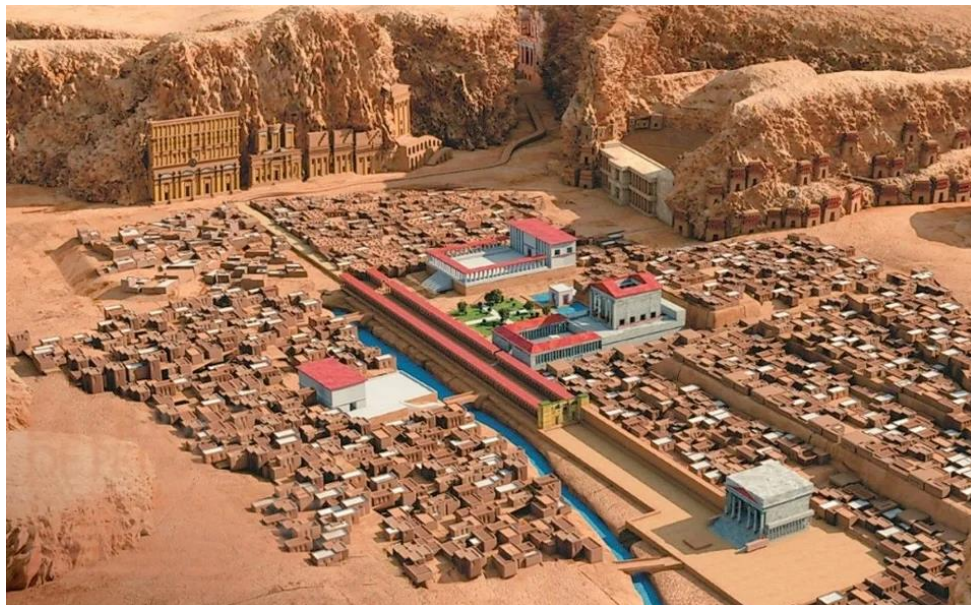


Fig. 2. Digital reconstruction of ancient Petra city with the principal monuments surrounded by mountains providing it with natural protection. (https://www.reddit.com/r/jordan/comments/qorzh7/a_digital_reconstruction_of_ancient_petra/).

A. Locating Hellenism in Nabataean Society: Clarifying the Meaning of Hellenism in Nabataean Petra Architecture

As known, there was no real political unity after Alexander's death, but a certain amount of cultural unity kept the Hellenistic world together. As a result, the area produced a combination of Hellenic and Eastern cultures, arts, and architecture, resulting in a new structure, which scholars have called the "Hellenistic culture". However, when dealing with the local cultural heritage and its particularity as reflected in the urban and architectural products of Nabataean Petra during the Hellenistic era, we can recognise the eastern tradition of Hellenistic urban planning and architecture has not disappeared after the Roman conquest. On the contrary, it continued and was adopted by the Romans. On the other hand, Hellenic (classical culture) was adopted and adapted by the Macedonians; and became a crucial element in Hellenistic civilisation, and the latter was adopted and adapted by the Romans (Haddad, 2021).

Petra is a perfect paradigm for understanding how urban and architectural culture affects international relations. In fact, through the spectacles of Hellenism, architecture was also a form of propaganda that linked the oriental regions of the *Oikoumene* together and resulted in the interaction between Greek and Middle Eastern cultures (Haddad, 2021). The critical factor here is that Hellenistic art and architecture were an organised industry. The new cities and the increased prosperity of some of the older ones created a new and more extensive but less demanding market. One of Hellenistic art's tendencies, if not one of the characteristics, was industrialisation (Grimal, 1968, p. 195). Here, the roots of globalisation can be found (Haddad, 2021). Malcolm Waters confirms his belief through his brilliant guiding theorem for the globalisation process: "*material exchanges localise, political exchanges internationalise, and symbolic changes globalise*" (Waters, 1995, p. 9). Moreover, the modern idea of globalisation has a strong historical connection to the Hellenization that defined the Hellenistic age (Stoyanoff, 1997, p. 2; Haddad, 2021). Therefore, Hellenism can only be understood as a product of cultural interaction between Greek and Middle Eastern cultures and interaction between the East and West. However, as reflected in the architecture and urban planning, one can say Hellenism is a cultural sharing and interaction model.

On the other hand, the tendency to produce a "pictorial effect" is one of the main morphological features of Hellenistic architecture (Haddad, 2013; Haddad *et al.*, 2019), opens a new vision of understanding the meaning and development of Hellenistic architecture. In fact, during Roman rule, there were changes in patterns in architecture that allowed more excellent circulation and more freedom of interaction. Finally, the Roman Empire successfully invaded the Hellenistic Kingdom. Therefore, since 146 BC, the artists, architects and planners of the Eastern region were never forced or maybe convinced to move towards the west, which is the date that can be considered as the turning point of Eastern Hellenistic influence on Roman architecture (Sear, 1982, p. 232).

II. TOWARDS UNDERSTANDING THE URBAN LANDSCAPE CONCEPTION OF NABATAEAN PETRA

The city of Petra, the capital of the Nabataean, was built in a valley surrounded by mountains providing the city with natural protection (Fig. 1, 2). One can assume that the harmonious relationship between the natural landscape and city layout approach design stemmed from the embodiment of the necropolis, and

the gods/ goddesses make it present in the imposing majestic gateway entrance to the city. City residents and visitors entered the district through a narrow high gorge. This natural entrance gateway, called the *Siq*, is hardly visible, thus providing security and protection for the city residents from those unfamiliar. However, besides Petra's site fortification factors, the terrain's spirit and character were divine. They symbolised the central ritual and religious factors that affected the choice of this site, starting from the cuboid three-dimensional rock-cut structures Djin blocks (Haddad *et al.*, 2015) to the city's main entrance, the *Siq*, until the characteristic Nabataean temple of Qasr El Bint (Fig. 1, 2, 11).

In approaching the city, one immediately notices how the Nabataeans planned the city to maximise and take advantage of the accessible majestic topography of the landscape. The monumental city layout design organisation and architecture of whole city complexes of terraced buildings, the individual elements which were deliberately played down, accentuate, and emphasise the organic unity of the whole. The Nabataeans were working in perfect harmony with their environment and local materials. In Petra, one can assume that there was enigmatical harmony between man, nature, and the divine rather than one of an "organic design". This is noticeable in the development and expansion of the Centre of Petra archaeological site. The hillsides on either side of the central city axis, and the Collonaded Street, run through the heart of Petra from the west to the east (Fig. 1, 2). The setting of temples and the majestic feature of the settlement with the city's central axis were calculated to impress a complex and sophisticated urban landscape culture. Due to varying geography, the decumanus become the main street in some ancient cities, and the *cardo* is secondary. This is the case in Petra, one of the oldest well-organised urban settlements in the Hellenistic Middle East. In addition, this central city axis creates a rectangular courtyard dedicated to the entire public meeting place where funeral ceremonies, commercial activities, and various other festive occasions are held (Fig. 1, 2).

The Main Open-Air Rock-cut Theatre of Nabataean Petra (Fig. 2, 3) can be considered a model for understanding the Hellenised Nabataean urban landscape conception. Walking through the *Siq* further down from the natural public plaza in front of the Treasury, one comes to the central city open-air theatre. What is even distinguished is that the theatre structure was, like many other facilities within the community, also carved out from the sandstone rock on an entirely rocky slope. As known, the significant locations of Greek and Hellenistic theatres tended to be around temple complexes in areas with great majestic natural views. In the Roman period, choosing a location for the theatre followed several considerations, most of which were on the city's urban planning in combination with the urban landscape. In Petra theatre, the case is exceptional; the theatre was located at the edge of the city, away from areas of dense construction but with an urban and natural majestic view synchronous.

Although the bend of this slope was appropriate, the location of this rock-cut Nabataean main city theatre particularity was reflected in the city's planning and had sufficient implications on the formation of the smooth continuity of the main city centre urban features. Moreover, the theatre is set on the foot of which runs the main collonaded street (decumanus Maximus). This civic feature of the city has also been used for entertainment and other community gatherings. However, perhaps, it was not an urban ritual theatre, like the case of the southern theatre at Jerash, located in the area of the Zeus sanctuary abiding by the Hellenistic traditions of the west. This further suggests that the building of Petra theatre may not have been in keeping with a tradition which had its roots in the Hellenistic sanctuaries, where theatrical activities were also held in theatres located in sanctuaries even though it was located within the city's walls. Moreover, the main aim of this theatre is not like the theatre at Wadi Sabra, which is part of a Nabataean sanctuary and caravanseraï south of Petra; the theatre at Sabra seems to have been part of the isolated Nabataean sanctuary in Leda.

Even though the Petra theatre within the city's urban plan is indistinct, it can be concluded that the architects wanted to exploit the possibilities offered by a landscape, and its location was decided mainly by the area's topography, which the Theatre building could enhance. Thus, one can hypothesise that the site selection of Petra's main theatre with a temple was not as important to the people of Petra as the requirements of the landscape formation. It may also state that the theatre served the population of the city and the visitors and commercials, soldiers permanently encamped in the city, and that it is an urban theatre. Even though Petra theatre had been erected outside the city centre, it was integrated into the city's main collonaded street, with some decorative elements marking where this street branched off from Petra decumanus Maximus.

III. TOWARDS UNDERSTANDING CITY PLANNING AND URBAN ARCHITECTURE OF PETRA

Petra is the model of our knowledge of how the Nabataeans designed and built their urban settlement. The Nabataeans were master planners in laying out their metropolis according to the rudimentary technology available. Because the city was built in a valley, they had to divert rainstorm water from the settlement so they were not denuded during the sudden heavy rainy seasons. Using essential tools, they chiselled canals through the hills to control and take the rainwater away from the main settlement, eventually emptying it at the edge of the district area. The rainwater that fell from the mountains was controlled and collected through narrow ducts carved into the sandstone hills. The following section

clarifies that while nature dominates in classical Greek architecture and city planning, in Hellenistic architecture, the human being dominates; in Nabataean Petra, both nature and human being dominate.

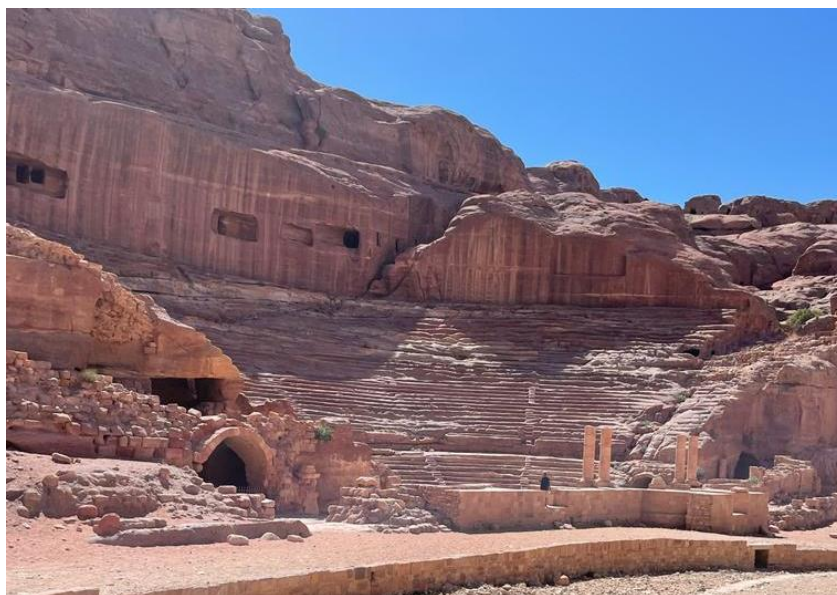


Fig. 3. The Main Open-Air Rock-cut Theatre of Nabataean Petra.

A. The Freestanding City Monumental Architecture

In the case of freestanding city architecture, only one Collonaded Street has been found in Petra, which crosses the city centre in an east-west direction. Thus, upon leaving the theatre area and along both sides of the collonaded paved street are the public buildings, the markets and shops. Interesting enough is the relatively large area is dedicated to the market in the city's centre. This confirms the special status of commerce in Petra (Hammond, 1973, p. 80. Segal, 1997, p. 80). Furthermore, because of the topography, the Nabataean designed the market in three rectangular terraces, the upper (64×70 m), the middle and the lower market (65×92 m) (Fig. 4).



Fig. 4. a) Aerial view of Petra's city centre, looking east. The 'Lower Market' is at the centre with the Great Temple immediately to the west. (<http://www.personal.psu.edu/faculty/l/x/lxb41/poolcomplex.htmlb>). b) Aerial view of the 'Lower Market' and the neighbouring Great Temple in 1996, prior to excavations in the 'Lower Market'. (<http://www.personal.psu.edu/faculty/l/x/lxb41/poolcomplex.html>).

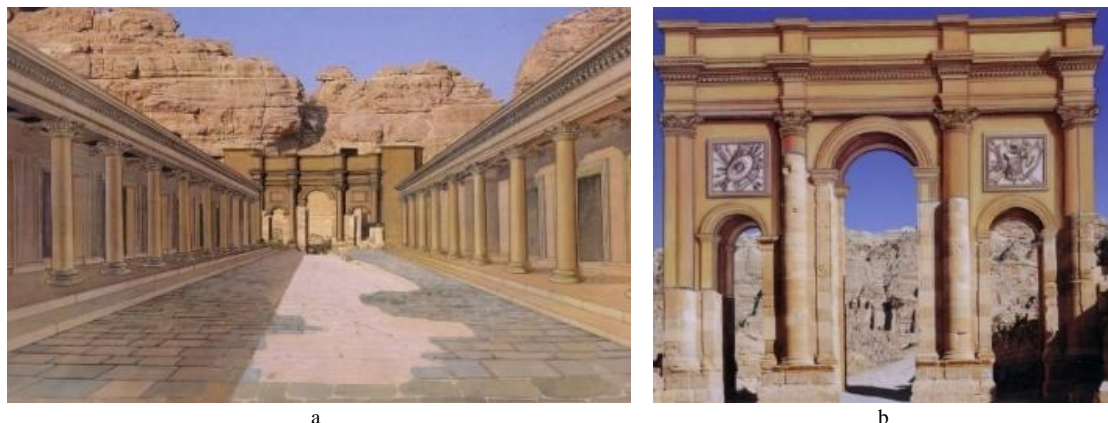


Fig. 5. a) Free Standing: The Colonnaded Street, Petra, shops. b) Reconstructed east façade showing the vaulted doorways of the Temenos Gate in Petra (https://madainproject.com/qasr_al_bint_%28petra%29#gallery-4).

The vital contribution of Petra's collonaded street to the urban landscape is significant. The Petra collonaded street works as a border than an ordinary Street. It runs in straight, uninterrupted lines across the city's length, connecting its different urban units (Fig. 1, 2, 5). It marks the transition from the mere scattering of the landscape, whose components reveal an obvious hierarchy through the dramatic emphasis of their created location. This collonaded street is a "processional road" and can be defined mainly as "*via sacra*" according to Segal (1997, p. 44-45), forming this crucial urban city section. Actually, within the saved length of 240m of this dynamic urban space, the collonaded street, which probably continued eastward to the small theatre, about 250m east of the Nymphaeum (Segal, 1997, p.165), we can find most of the inhabitants' ritual, social and commercial activities taking place there. The facades of the buildings which surrounded the Collonaded Street appear to have been ornamented with freestanding columns with architraves and/or engaged orders. However, statues may have been added here though there is no pragmatic evidence for this.

The Nymphaeum (Fig. 6) (2nd cent. AD) location, at the end of the city's eastern edge on the south bank of Wadi Musa, closely to the beginning of the Collonaded Street, is characteristic. The well-preserved foundation, the first grand and street decorative freestanding structure, greeted the wayfarers on the way to Petra and heralded their entrance into the city's primary energetic component, inviting the citizens and visitors to continue their wake after having the needed rest. This massive decorative construction (21 m in length, with a semi-circular niche (6.5 m) at its Centre), with its continuous water pouring in arid Petra, was undoubtedly an impressive, attractive feature in the city's flexible and resilient layout design. Moreover, its location provided the city landscape with an aesthetic focus on charming and satisfying nature.

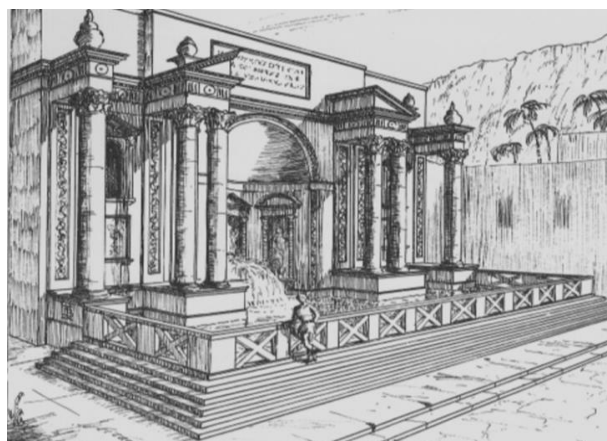


Fig. 6. The Nymphaeum located at the end of the city's eastern edge (After Browning, 1982. Fig 81).

B. The Layout Design Particularity of the Commercial City Plaza/Market of Petra

Petra's three-level public plaza/ market, according to their urban spatial planning and organisation, reflects the original local architectural and planning creative Nabataean solutions. Their urban and architectural paradigm is not different in their shape and manner of design from the Roman Marcell; for example, in the case of the city of Jerash, nor do they resemble the Hellenistic permanent markets as examples of Asia Minor. On the contrary, Petra's three-level public plaza is an example of the originality and uniqueness of Nabataean architecture. At least the square peristyle area of the Upper Market

(69.5×76.5 m) was the central open-air meeting place that performed an essential role in the city's socio-cultural and economic everyday lifestyle.

Essentially, the critical commercial junction of the prominent market area, the shops and stores, and the Nymphaeum along Colonnaded Street in Petra hints that Petra's daily commercial life and conducted activities were permanent and large-scale. However, due to the limited excavations investigations in this part of the city carried out since 1917 by the Germans, the accurate identification of these three terraces is not yet final. The unexpected discovery in 1998 of a monumental swimming pool complex with an island pavilion in the area known as the Lower Market since 1921 makes caution necessary when referring to the unexplored Middle and Upper Markets (Kanellopoulos, 2002, p. 307). In association with swimming – the pool remains of an elaborate hydraulic system-channel, pipelines, and a diversion tank (castellum) – that transported water to the pool and irrigated the large garden terrace to the north of the pool (Fig. 7). This grand Garden, located in the heart of the city centre, on an artificial terrace overlooking Colonnaded Street, between the so-called Middle Market and the so-called Great Temple, represents the only paradigm of a Nabataean Garden in the archaeological record of the region (Bedal, 2001, p. 381) (Fig. 7, 8).

Fiema (1998) suggested that the Upper Market, including its monumental staircase (width of 14,80 m), the renovated shops, colonnade, and paved street, were all constructed in the early decades of the second century AD (Fiema, 1998, p. 416-17). This is the largest of its kind in Petra. Indeed, it is 2.5 times wider than the staircase leading to the enormous complexity of the so-called Great Temple. The size of the Upper Market staircase can be compared to the monumental staircase of the Artemis and Zeus sanctuaries at Jerash (ca. 15 and 20m wide, respectively) (Kanellopoulos, 2002, p. 307). According also to Kanellopoulos (2002), the two piers of the so-called Trajanic Arch in front of this monumental staircase at Colonnaded Street could belong to a conjectural tetra pylon spanning the street. Unfortunately, the material evidence is inconclusive due to the poor preservation of this city area, and this argument for a city tetra pylon is still weak.

C. Temple Institution: The Golden Triangle of the Three Central City Free-Standing Temples

Equally remarkable was the formation and layout design characteristic golden triangle of the three central city freestanding temples (the so-called Great Temple, Temple of the Winged Lions and Qasr El Bint) (Fig. 1, 7). The city's expansion, at least in the late first century BC, including the construction of the so-called Great Temple, located in southwest central Petra, just before the Temenos Gate (Fig. 5), provided a turning point for the creation of freestanding colossal, monumental architecture.

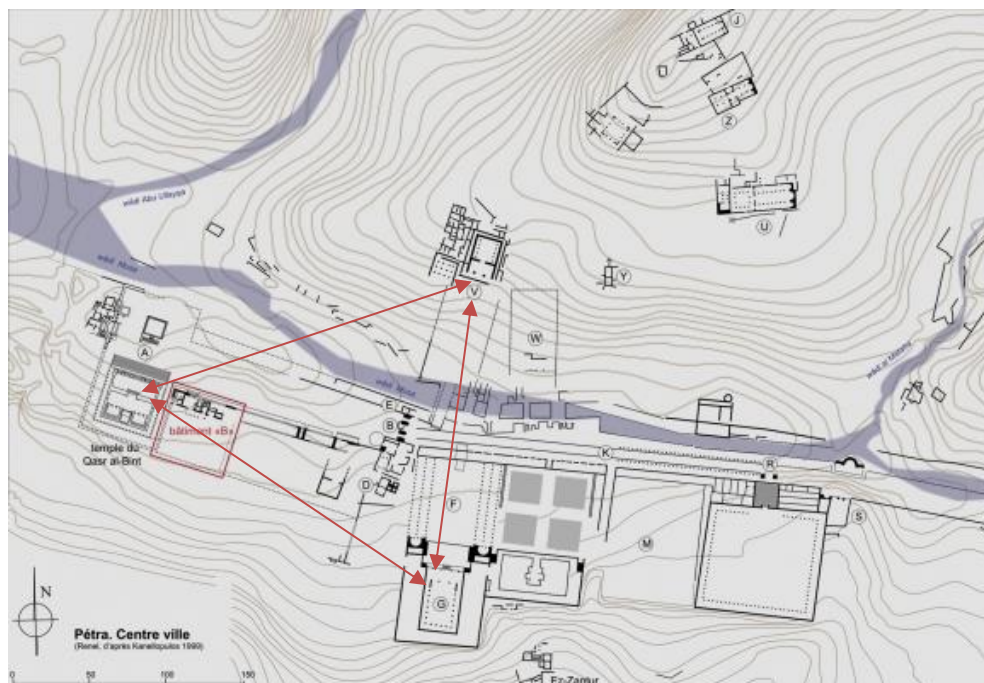


Fig. 7. The plan of Nabataean Petra city centre shows the freestanding three temples: Great Temple, Temple of the Winged Lions and Qasr El Bint (after Kanellopoulos – Akasheh, 2001).

This grand structure stands on a different axis but is roughly parallel to Qasr el-Bint. The vast area dedicated to the Great Temple (7560 m²) (128×59 m) indicates its prime symbol of the city's identity. Moreover, it shows the enclosure's position in central Petra, which has transformed the city's urban landscape. This led to an incentive for planning for municipal/urban sophisticated water systems integrated into this great project before any monumental building took place. According to Joukowsky (2009, p. 292), such Nabataean environmental consciousness is astounding, and both the innovation and the execution of

these systems found at the Petra Great Temple are remarkable (Fig. 7, 9). The temple complex consists of a Propylaeum, Lower Temenos, and Upper Temenos, the sacred enclosure for the temple proper (Fig. 7, 8).

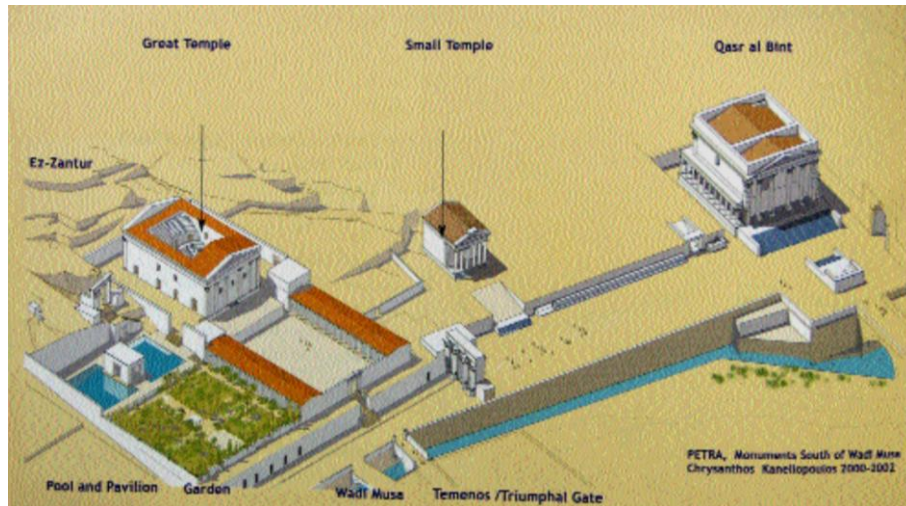


Fig. 8. Sanctuaries in Petra's centre along the south bank of the wadi Mousa torrent, isometric restitution (Kanellopoulos 2000–2002).

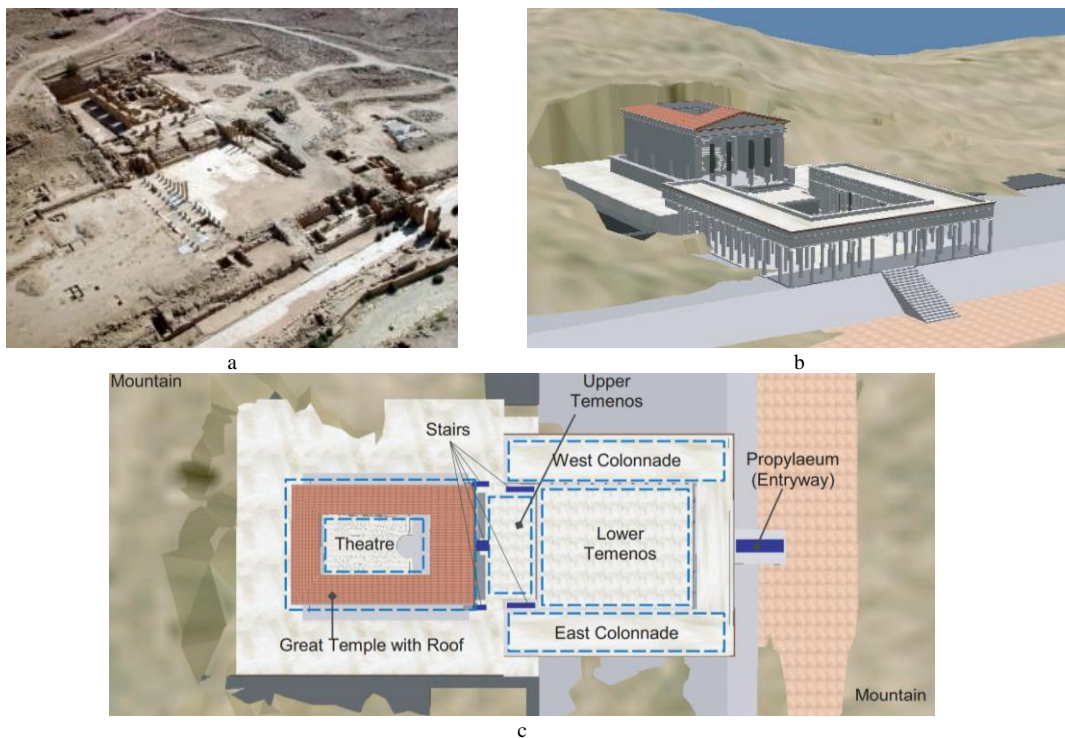


Fig. 9. a) Aerial view of Great Temple site (after https://www.brown.edu/Departments/Joukowsky_Institute/Petra/images/2002/aerial2.jpg). b) Reconstructed 3D model of the Great Temple. c) Layout of the Petra Great Temple precinct (After Shao and Terzopoulos, 2006).

This *tetrastyle in the antis temple* structure (42.5×35.5×19 m), with its rich ornamental vocabulary of the classical/Hellenistic influences, is the largest freestanding structure in Petra servicing as a place of worship and seat of the government (Joukowsky, 2009, p. 299).

The discovery of the later small theatre (1st cent. AD) within the temple cella walls has been considerable debate and speculation about the character of the Great Temple and whether it was a sacred place or an administrative entity. Joukowsky (2009), as the site excavator, now believes it served dual purposes. She assumes that at this point, there may have been an emerging secularized civic identity and a consciousness that defined the community in political as well as religious terms, after which it was enlarged with theatre in the first century AD. First, with the addition of the small theatre, it would seem that there may have been a shift to secular concerns, and the temple became a civic building for more public purposes (Joukowsky, 2009, p. 303). This rational hypothesis is essential not only to the temple site area but for the whole city Centre, even for the religious and socio-economic perception of the Nabataean metropolis. This may indicate the city's transformation from a Hellenistic Nabataean settlement into a more Roman urban Centre.

On the other hand, the restored three-arched entrance gate (1st - second cent. AD) (Fig. 5), which gives

access to the main temple of Petra, Qasr El Bint, resembles a Roman triumphal arch. The central doorway entrance is about 4m wide, the side ones each about 2.40m wide. It is not freestanding but, instead, placed between buildings that lie north and south of it. The gate-rich architecture and decoration suggest an excellent and unique integration of Roman and Nabataean architectural elements and decoration (integration of freestanding and engaged order with Corinthian and Nabataean capitals).

However, Parr's excavation has confirmed that this gate was built upon the site of an earlier gate, which was dismantled to make room for the new, monumental structure (Parr, 1960, p. 131-32; Segal, 1997, p. 106, note 60). However, it is certainly possible that this street was constructed first when the Hellenistic phase of Qasr El Bint was erected and thus indicated as the guide of the master plan of the city's future development and expansion. A similar collonaded street approach can be found in Susita (Hippas). Its length is about 549m, which crosses the entire city on a southern-northwest axis. A similar three-arched entrance gate approach can be found in Seeia (Si), of Hauran, in the Nabataean sanctuary, in the Roman Gate (Segal, 1997).

The revealed in 1973, *distyle-in-antis Temple* of the Winged Lions (Fig. 10) is approached from the collonaded Street by a bridge that spanned the Wadi Musa and entered a propylaeum, a monumental staircase framed by high walls and columns. This sacred complex with a grand entrance and winged lion capitals is believed to have been dedicated to Isis and Osiris, identified with Dusares (Dhu-shara) and al-'Uzza- Aphrodite. The spiritual focus was likely on a statue or a standing stone set on the podium (1.30 m high). The sanctuary consisted of a raised platform in the centre of which was placed a betylus. The rooms uncovered to the north of this terrace probably served as residences for the priests and workshops for making cult objects.



Fig. 10. a) The Temple of the Winged Lions photographed from the air prior to TWLCRM Initiative interventions (Photo: Christopher A. Tuttle [ACOR], first published in ACOR Newsletter 21.2, 2009).
(After <https://acorjordan.org/temple-of-the-winged-lions-introduction/>).
b) A view of how the temple may have appeared from the collonaded street in Petra. (Rendering by Qais Tweissi.) (After <https://acorjordan.org/temple-of-the-winged-lions-introduction/>).

Finally, the Small Temple Complex (75.6×31.1 m) (Fig. 8) is a freestanding structure that lies within the religious core of the city, aligned on the axis slightly east of the north. It is situated on a flat plain between Qasr al-Bint to the West and the Great Temple to the east. The complex incorporates two primary levels; the amphiprostyle building (13.6×13.8 m) rises in the south and slopes down to a courtyard north. The great marble finds (4669 fragments), according to Reid (2002), can be approached as an indicator of Petra's role in trade and commerce during the Roman occupation (Reid, 2002, p. 378). Crucially, we can argue that we can place, the Nabataean "Temple Institution" reflected in architecture, as a multifaceted institution that mediated relations with the administrative authorities, while acting as the main repository of a lively ancestral eastern tradition, which was constantly nurtured with new Hellenistic ideas and techniques drawn from a wide variety of the surroundings various cultures.

D. Native Temples of the Hellenistic East: The Particularity of the Layout Arrangement of Nabataean Temple Architecture

In the private houses of Petra, there are many features indicating that the Nabataeans were inspired by the current type of late Hellenistic houses and palaces. Similar examples of both features can be seen in the houses of Memphis and Delos. The appearance, however, of huge courtyards with porticoes in front of some temples, like the Qasr el-Bint (Fig. 11), the "Great Temple" (Fig. 9) and the Temple of the Winged Lions (Fig. 10), reflect Egyptian and Ptolemaic influence. This feature can be seen in every Egyptian temple before and from the Ptolemaic period, such as in the case of the Ptolemaic Edfu temple. However, some scholars (Wright 1962, p. 29; Netzer, 2003, p. 110; McKenzie, 2004, p. 8), have divided the Nabataean temples into typological groups according to the layout of their architectural plans. Meanwhile, Netzer

(2003, p. 114-115) concentrates on the same layout design's main features rather than the typology. He defined the main characteristics of Nabataean temples: a plan in the form of a square within a square, an ambulatory, a broad naps, a temenos with an external altar, a forecourt with benches and a *tripartite adyton*, which is the triple organisation of the layout of the chamber (two side spaces flank the central chamber space) and is usually located in the back part of the temple's hall, opposite the main entrance, enclosed within a massive straight – sided rear wall, or solid hollowed by hidden recesses.

These native temples of the Hellenistic east liturgy provide the particularity of eastern Hellenistic architecture. This particularity of liturgy can be followed by the study of the layout design arrangement in Nabataean temples, in which the liturgical tradition is reflected. This can be traced especially in the use of the "*tripartite adyton*" (Fig. 11), and the freestanding *adyton*, which comprise the most general characteristics of the Nabataean temples (Netzer, 2003, p. 112-113; Rababeh, 2005, p. 173). Netzer suggests that the origin of the naiskoi or altars and adyton is in the Syro-Phoenician region (Netzer, 2003, p. 114-115; Rababeh, 2005, p. 173). This rooted arrangement in the internal organisation is reflected in the primary geometry of the spaces, which was closer to the square in temple architecture. Tracing the successive ancient historical eras, religious architecture and related rituals, we can confirm that the tripartite adyton arrangement started from the east, as evident in Mesopotamian temples (Sear, 1982, p. 250). For example, these features can be seen in the Temple of Bar'an at Marib and Saba (Rababeh, 2005, p. 202-203). Schmid (2001, p. 379) notes that although these examples are earlier than the Nabataean ones, they remained in use until the fourth century BC or later. Meanwhile, the square plan and the *tripartite adyton* can be seen in the Hellenistic temple of Jebel Khalid on the Euphrates (Rababeh, 2005, p. 176).

However, the triple chamber organization (see Fig. 11), in these native temples of the Hellenistic east, within the periphery of the wall is evident in the temple architecture built in the Late Hellenistic and beginning of the Roman era, in the east under the influence of the Nabataean Kingdom, where the local population, especially the inhabitants of Huran maintained cultural and trade relations with the Nabataeans. It seems that the Nabataean inherited this tradition from Mesopotamia, and it could have been brought to Syria by Assyrians, as Frank Sear (1982, p.250) pointed out. The square paradigm with the "*tripartite adyton*" layout organisation is part of the eastern local tradition of Late Hellenistic and Roman Syria. This arrangement appears in Qasr el-Bint Firaun-Temple/ Petra (Fig.7, 11), Khirbet adh-Dharih Temple, Qasr el Rabba Temple, Temple of Dibon, Temple of Artemis / Jerash in Jordan, Praetorium in Phaena and Mismiji (Zeus Phanesios) / Syria, Jupiter Temple / Baalbak, Bel Temple / Palmyra, Nebus Temple / Palmyra, Belshemen / Sia Temple / Syria, Temple of Zeus / Damascus, and Temple of Qôs / Baalbak. These traditions do not belong to ancient Greek and Hellenistic Western temples, where only one main rectangular chamber is evident (Haddad, 2013).

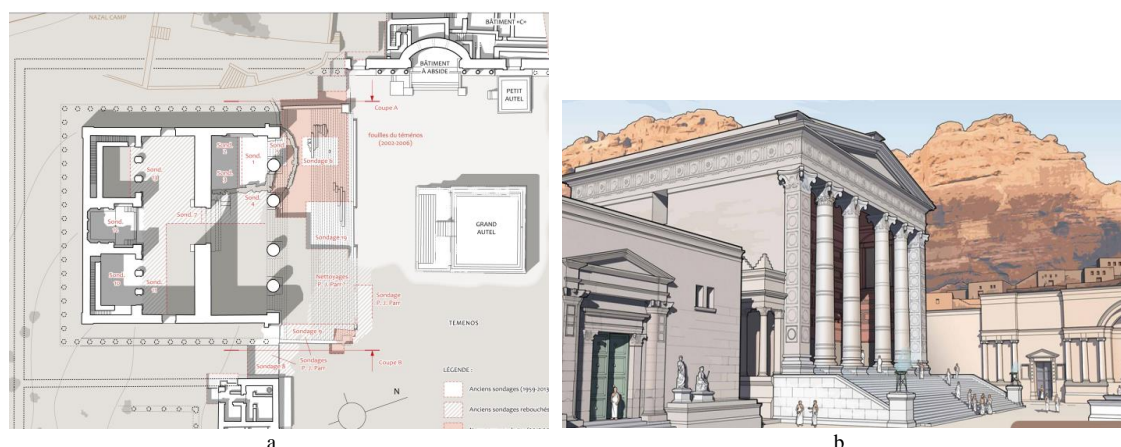


Fig. 11. a) Renel François, Fournet Thibaud Jan, Jordan of Archaeology and History the on Conference International 14th). Petra (area temple 02005066ff-fhshs. Italy, Florence, 20. b) Petra, The Qasr el-Bint Area as it appeared in the Roman period, 2nd-3rd Centuries AD https://halshs.archives-ouvertes.fr/halshs/02005066/file/2019_FOURNET_RENEL_ICHAJ14.pdf.

IV. NABATAEAN MORPHOLOGICAL ARCHITECTURAL CONCEPTS AND APPROACHES

A. Multilayered Dynamic Façades: Towards a Notion of the Nabataean architectural Facade Conception

Ptolemaic Alexandrians' political and cultural influence guaranteed the transmission of many architectural patterns to other areas of Egypt and other lands within and outside of Ptolemaic control, including Libya, Cyprus, Cyrenaica, Syria, and Palestine (Lauter, 1974, 180). However, during Roman rule, there were changes in architectural patterns that allowed more excellent circulation and more freedom of interaction. Many of these changes were developed under Roman rule as a product of the Hellenistic period. Its main architectural elements included primary freestanding columns, engaged order (semi- columns,

pillars and pilasters), segmental, triangular and broken pediments, and rectangular and semi-circular niches intended for statues.

Using "non-tectonic" structural elements as surface decoration, their vast scale, harmony within the natural landscape, architectural style and rhythm, and construction details guaranteed classical antiquity baroque facades superabundance through the perpetual interplay of light and shade they created. The Hellenistic Macedonian trend searching for symbolic artistic subtraction and interaction of the classical prototypes in which the central doorway symbolised the whole structure (Haddad, 2021; Haddad, 2013) (Fig. 12), is a good paradigm to this a-tectonic Hellenistic formation that gives room for the creative imagination and inventiveness of the Nabataean local architects and builders to more certain theatricality-screened facades. They successfully created a screen hosting and integrated different architectural multilayered from different historical schools and periods on the same façade (Haddad, 2013; Haddad *et al.*, 2019; Haddad, 2018) (Fig. 13).

The formation of Nabataean Petra façade's architecture constitutes a leading source of evidence as a city and for the architecture of the late Hellenistic and Roman periods. It stimulates new speculation and evolution of the roughly studied Eastern Hellenistic architecture, which at the very least must be placed, in the much larger context of Hellenistic traditions in the Near East. The traditional Nabataean façade architectural style depends on the screened-blind openings and engaged semi-columns in rock-cut relief tombs and freestanding religious and even civic structures (Fig. 13), thus following the general façade formation of Hellenistic Macedonian and Alexandrian examples (Haddad, 1995; 1999; 2018).

Essentially, the architecture of the rock-cut facades of Petra and the later Madain Saleh represents the final artistic model of the evolution of late Hellenized stylistic morphology. However, according to the architectural concept of Eastern Hellenistic architecture, especially the luxury architecture of eastern late Hellenistic palaces reflected in the architecture of Nabataean Petra and the Roman wall painting of the so-called "second Pompeian style" must not only be considered and understood as an actual representation of the freestanding models but also as the new model of cultural interaction between the East and West (Haddad, 2018).

Vast necropolises have been dug into Petra Mountains: at least 1179 rock-cut tombs, including 628 with a decorative façade (Nehme, 2003, p. 157). The soft sandstone of Petra makes for the easy carving of the monuments, but it is also easily eroded by natural factors. In the funerary context, religion is everywhere, and the plan of the tomb is organised according to specific funerary rituals. Even libations were part of these rituals and banquet rooms as part of the funerary cult in Petra. Curved-in funerary complexes also provide indirect evidence for libations since they were places of eating and drinking (Sachet, 2009, p. 99). However, the funerary complex, including the banquet room, was sacred and placed under the protection of the god Dushara (Sachet, 2009, p. 107). According to Tarrier (1988, p. 99) about 25% of the banqueting rooms in Petra were reserved for funerary meals. However, according to Sachet (2009, p. 108), some of these rooms were used for funerary meals. In addition, as part of an architectural complex dedicated to the dead, this was initially planned for that purpose.

Nabataean Petra is the best paradigm to understand the cultural interaction of late Hellenistic morphology reflected in the façade formation. Through the stylistic artistic evidence, the cultural role played by the Nabataean during the Hellenistic and Roman periods combines local Nabataean architectural elements with the Assyrian, Egyptian, Greek and Roman (Fig. 13). The rock-cut façades and tombs were quite precocious and costly. Indeed, these were decorative structures and indicated how families wanted to be seen for eternity. In Nabataean Petra, We see some of the best-preserved samples of the late Hellenistic morphology, often in an appealing combination of oriental stylistic elements (Haddad, 2013; Haddad *et al.*, 2019; Haddad, 2018), such as the Egyptian cavetto or the Assyrian crow steps and Western stylistic elements, such as the Pedimented doorways. This compensation with these architectural elements (cavetto, crow steps, and Pedimented doorways) is unique in the History of architecture.

This is clear in most of Petra's rock-cut façade formations. From the Pylon Tombs or Rectilinear, Step Tombs or Cavetto Type, Arch Tombs, Proto-Hegr or Double Cornice, Hegr or Double Cornice, Rectilinear; Assyrian-Type, Assyrian and Cavetto Type, Cavetto Type, Cavetto and Double Cornice, to the classical Nabataean and Baroque (Haddad, 2013) (Fig. 13). However, the baroque nature of the rock-cut sandstone façades is immediately apparent in most the façades. McKenzie (1990, p. 100-101) concluded that the baroque architecture of Ptolemaic Alexandria, as depicted in the second style Pompeian wall painting and reflected in the classical architecture of Petra, proved that the architectural details such as the capitals and cornices of Petra are closely related to the examples in Alexandria (Haddad, 2018). The synthesis of Hellenistic architectural facades with traditional Nabataean rock-cut temple/tombs, including the Khasneh, the Urn Tomb, the Palace Tomb, the Corinthian Tomb and the Deir ("monastery"), represents a unique artistic achievement and an outstanding architectural ensemble at least of the first centuries BC to AD. However, the cultural diversity and interaction exhibited in the façade formation and the material remains indicate a remarkable creative Nabataean community spirit. For example, the wealthiest Nabataeans used tombs with a decorated and elaborated façade for burying their dead in family chamber tombs; meanwhile,

poor people used pit- tombs and shaft tombs. Undoubtedly, elite tombs with a façade were built with eternity in mind (Sachet, 2009, p. 97-8).

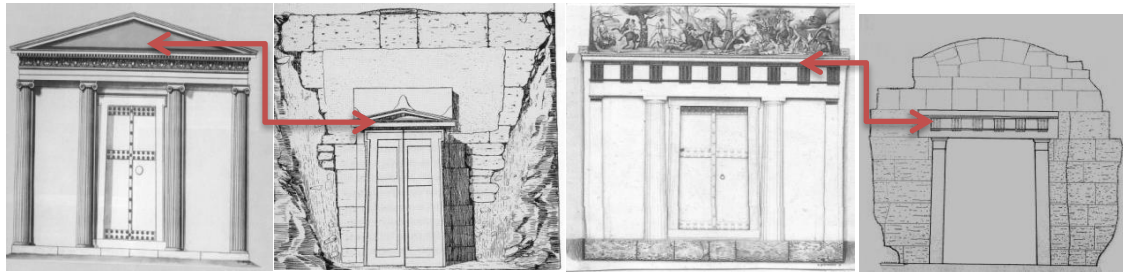


Fig. 12. Representation of the new Hellenistic Macedonian trend searching for symbolic artistic subtraction and interaction of the classical prototypes in which the central doorway symbolised the whole structure (After haddad, 2013, 22021).



Fig. 13. Different types of rock-cut façade formation in Petra (After haddad, 2013).
<http://www.plan27.it/en/portfolio/khasneh-al-faroun/>.

These morphological artistic elements made Petra a metropolis paradigm during the Hellenistic and Roman periods. Here, the Nabataean architects moved among different communities and ethnoses, creating high artistic standards in architecture in combination with local tradition. The result was a new stylistic facade of Greek culture with the old oriental cultures of Egypt and the Near East. To create this new stylistic aspect, the Nabataean used Multilayered (three different historical architectural layers) on the same façade, breaking with previous Greek architectural practices and focusing more on Eastern traditions. This can be seen in most of the rock-cut façades of Petra.

V. DISCUSSION AND RESULT

The Nabataean civilisation provides the chance to explore themes related to the "Aegean-Arabian' contacts', such as Environment and Technology: hydrology, transport, resources; Nodal zone and transportation transfer between camel caravans, formal roads for carts, and ships; cultural imports from Greece, Mesopotamia, and Arabia and preservation of traditional cultural and governmental systems, use of koine; Selective use of writing restricted to administrative and religious usage; nomadism, pastoralism, and urban-sedentarism" (Westra *et al.*, 2022, p. 1), and morphological architecture. However, its main commercial character, for the service of caravanserais, traffic flowed through Petra going north to Damascus, east to the Persian Gulf, south to Aqaba, and West to Gaza.

In Nabataean Petra, the landscape and nature, with all their topographical, geomorphic, and environmental changes related to water and floods, were influential in the design and the creative integration of the Greco-Hellenistic and Roman architectural components city. Pedal (2004) has described the Petra Pool-Complex: as a Hellenistic Paradeisos in the Nabataean Capital, in which the ostentatious display of large bodies of water of this pool complex, would have certainly impressed them as a near-miraculous display of power and mastery over nature. This city centre cool and green oases, surrounded by hot, dry landscapes, would indeed have been an astounding sight for the sun-beaten and weary local community, visitors and travellers (Mithen, 2010). The Nabataeans, through their capital, represent the accomplishments of a specific group of "farmers and pastoralists with nomadic lifeways that settled in north-western Arabia who built cities and the outcome of centuries of development" (Westra *et al.*, 2022).

The Nabataean impressive and astonishing architecture in the arid and desert-like conditions of North-western Arabia was based on a plastic effect interpreted by viewing their buildings as massive sculptural monuments and flexible structures that absolved of presupposed evolutionary trajectories seen from the surroundings. Thus, the spiritual feelings for the landscape affected their building concepts, and the tombs, temples and civic structures were crucial examples of this relationship. In the city's main theatre, the terrain primarily determined its positioning within the city and curved out of the slope and above the west side of the Collonaded Street. Like many of its Hellenistic descendants, the theatre was built in the city's open air. Therefore, Petra theatre can be considered a critical factor and component in evaluating the theatre's contribution to the design of the natural landscape and urban landscape in Petra from the following aspects; determination of the location, orientation, and size of the theatre within the ancient city's boundaries, relation within sanctuaries inside and outside the city, and, in particular, the mutual relationship between the theatre and landscape and their interaction with other public buildings according to their city planning concept.

The Collonaded Street of Nabataean Petra represents a model for understanding how eastern Hellenistic and Roman regions lent the urban landscapes an appearance of grandeur and magnificence. It is multi-purpose with multiple uses as a multi-functional social, religious and political meeting urban space designed for public assembly. It has been used for many purposes, including traffic, market and meeting places. However, it was influenced by many geographic, climatic, religious convictions, political, economic, social, cultural and technological factors. Meanwhile, Hellenistic Eastern influences and traditions are evident. However, most structures are integrated into the urban landscape on the macro and micro scales. At the same time, we occasionally encounter traces of local building traditions in specific details of architecture, decoration, construction techniques and curving or building material. Through their hydrological network of water supply, a unique achievement in human History and creativity, the Nabataean could build veritable Garden-cities in the very arid region of Transjordan (Pedal, 1998; Westra *et al.*, 2022).

A. *The Particularity of the Architectural Treatments of the Hellenistic Nabataean Façade Formation Paradigm*

Many scholars (Lyttleton, 1974, p. 70-83; Wright, 1962, p. 33-36; Rababeh, 2005, p. 161) have noted that the architectural façade formation images of the main monuments of Petra are shared with other Hellenistic and Roman architecture. This was a result of the "Greek-Arabian contacts have been developed from the interaction of settlements with social structure and hierarchy, environmental impacts and self-organisation where social responses are transformed into new motives that seek to bring a system into equilibrium despite the pressures of constant change" (Westra *et al.*, 2022, p. 158). They have tended to accept Alexandria as the source of those influences since there is no support for direct cultural influence between Pompeii and Petra. Thereby, Ball (2000, p. 71-72) divided the rock-cut facades into two main categories. The first forms the rock-cut monuments in Petra and Median Saleh and is labelled the Assyrian style. The second is classical but also includes crowsteps. However, Schmid (Schmid, 2001, p.383-384) also divided the facades roughly into two groups "more oriental" and more "Hellenistic"(Schmid, 2001.p. 382; Wenning, 2003, p. 137-41; Rababeh, 2005, p. 153).

Although the architectural composition of el-Khazneh (Fig. 13) is found in wall paintings of the so-called "second Pompeian style", it is now generally accepted that the architecture of Alexandria influenced the form of it and other buildings in Petra. Moreover, fragments of this architecture survive in Alexandria from freestanding buildings. This may indicate that freestanding buildings influenced the form of the Khazneh (Rababeh, 2005, p. 179-180). However, many scholars (Wenning, 2003, p. 14; Schmid, 2001, p. 386-387; Haddad, 199,p.164; McKenzie, 1990, p. 75-77, 169; Lyttleton, 1974, p. 53-60; Lauter, 1971, p. 149-78) have connected the architectural façade formation of el-Khazneh with that of Palazzo delle Colonne in Ptolemais, Cyrenaica.

Indeed, through the variety and richness of the decorative architectural elements of the Nabataean façades, the architecture of Petra perfectly reflects the spirit of the late Hellenistic architecture, where architects moved among different cultures to create high artistic architectural formations. The independent perspective screen (façade) was the central concept of the Petra Hellenized façade formation. Meanwhile, there were precise treatments to achieve a "dramatic scenographic effect" by emphasising the central part and the above elements in the rhythmical columnar façade. This can be seen in the rock-cut façade of the Palace tomb at Petra, which imitates a Hellenistic palace façade, as in the case of the "Great tomb" at Lefkadia (Fig. 14), and at Vergina and Pella, early Hellenistic palaces (Haddad, 2013; Haddad *et al.*, 2019).

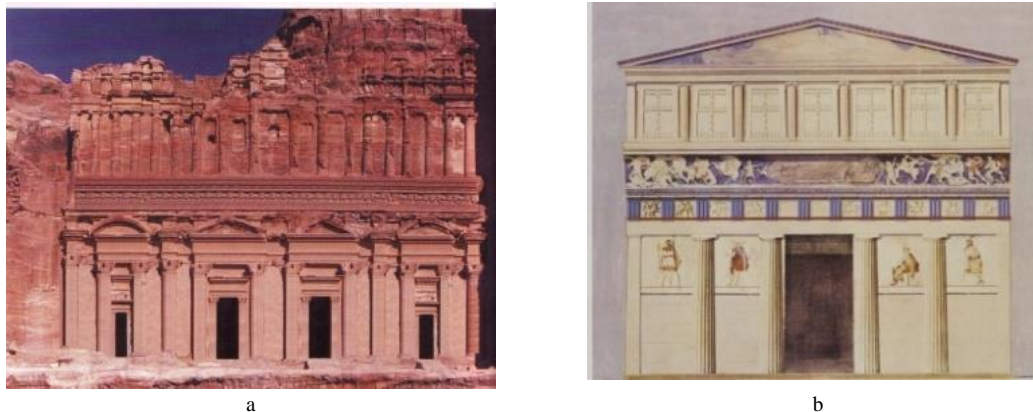


Fig. 14. a) The rock-cut façade of the Palace tomb at Petra. b) Reconstruction of the two-floor façade of the Macedonian "Great tomb" (End of the fourth century BC) at Lefkadia (after Haddad, 2013).

This is apparent by the extensive use of engaged columns and pilasters and Alexandrian forms of pediments and entablatures, such as segmented pediments, curved entablatures, and even sometimes broken pediments coated with decorative stucco. The use of decorative stucco and wall paintings in Petra's rock-cut facades, temples, and private houses was wealthy (Kolb, 2003, p. 234-5; Kühnenthal and Fischer, 2000, p. 120; Haddad, 1999, p. 169; Zayadine, 1987, p. 131-142). However, Zayadine (1987, p. 140) and Haddad (1999) suggest that paintings in Wadi es-Siyyagh in Petra link to the Hellenistic tradition of Ptolemaic Egypt and Macedonian tombs and wealthy Pella villas architecture. Petra and Medain Saleh are the best-preserved samples of late Hellenistic façade formation, often in an appealing combination of oriental and western elements. This artistic expression makes it a unique school of the late Hellenistic facades' formation approach. Moreover, it brings a particularity to the eastern architecture of Petra according to the availability of sandstone, the local landscape and the regional architectural traditions.

For example, previous studies have generally suggested that the crow steps motif was probably the earliest architectural feature of the Nabataean. Therefore, the use of crow steps and Egyptian cavetto should not be considered as an indication of homeland and a chronological criterion, but the same as the use of Doric, Ionic or Corinthian elements on the same façade. However, this is not the case that the shift from crow-stepped and Egyptian cavetto facades represents the shift of the Nabataean cultural orientation from East to West, as in the case of Alexandrian architecture, as Vient (2001, p. 71-73, 79, 80-83, 91-95, 107, 124, 146, 190) argued. Schmid (2001, p. 383-384) emphasises that there is no good reason to believe that "the simpler facades, showing stronger oriental influence, would be older than the richly decorated ones like al-Khazna" (Schmid, 2001, p. 382; Wenning, 2003, p. 137-41; Rababeh, 2005, p. 153).

Indeed, these three different historical architectural treatment layers were not only decorative structures but also indicated how families wanted to be seen for eternity. It is possible, therefore, that this multi-historical layer's architectural concept may come from that direction. Meanwhile, the more superficial rock-cut facades show stronger oriental influences than the more complicated ones, which show Macedonian and Alexandrian Hellenistic influences; the more prominent and richly decorated facades are more complicated and show stronger classical influences. Finally, the simple rock-cut facades used more oriental architectural elements. According to Rababeh (2005), the carving techniques for these elements were developed locally. These formal artistic elements made Petra a model of a metropolis during the late Hellenistic and Roman periods. The architecture of the rock-cut façades of Petra represents the final artistic model of the evolution of the concept of façades formation of the Macedonian tombs. In contrast, the tombs at Madain Saleh were later imitations of the architecture of the rock-cut façades of Petra.

VI. SUMMARY AND CONCLUDING REMARKS

Hellenism as a culture was a real force on urban planning and Architectural products of the Nabataean Petra Paradigm. The Nabataeans carved out an extraordinary metropolis from the Sandstone Mountains surrounding the ancient city centre. It seems that Nabataean Petra flourished at least towards the end of the second century BC and the first century BC. It appears to have witnessed a cognitive revolution in the perception of time, as indicated in the morphological and stylistic Nabataean architecture. Indeed, Petra is our primary source for Nabataean art and architecture, socio-economy, religions and culture, and model of Cultural Interaction.

Nabataean Cultural Interaction during the Hellenistic area can be considered a paradigm to highlight the continued strength of native cultures in Hellenistic times and their robust willingness to borrow from one another. It was also rational that Nabataeans' religion led to the creation of architecture of tombs, theatres, temples and cult centres in most of the city's surrounding mountains. The varied archaeological remains and architectural monuments from prehistoric to medieval periods bear exceptional testimony to now lost

civilisations which succeeded each other at the site (<http://whc.unesco.org/en/list/326>).

This research tried to shed light on the functional and morphological characteristics in the urban development of Petra, particularly in the public spaces of the city centre and the surrounding tomb architecture. This development and formation were the architectural expressions of the highly developed self-image of the citizens of Petra and its urban and architectural cultural significance. The architectural treatments applied to the rock-cut Nabataean façade maintain the particularity of the late eastern Hellenistic stylistic architecture. However, moving away from the limitations imposed by the nature of the underground Macedonian and Alexandrian examples, the architects were forced to develop some new architectural borrowed elements suitable for their use as the local materials required. By applying on the same façade earlier oriental historical architectural multilayers and re-adapting the western Hellenistic elements in a new approach with new expressions, they add a new dimension to the perspective treatments, thus achieving a sense of "movement".

Nabataean Petra architectural Paradigm represents the actual image of the late Hellenistic stylistic morphology, reflected in the façade architectural formation, which combined the civilisations of the ancient Near East with the Greco-Macedonian Hellenistic and Roman. However, the artistic treatment gave Petra a prominent position among the cities of the Hellenistic and Roman periods. The main aim of these stylistic treatments was to reflect the new image of Hellenism's powerful spirit in the Ptolemaic Alexandria and Nabataean Petra. Therefore, the Hellenistic funeral architecture of Macedonia, Ptolemaic Alexandria and the architecture rock-cut tomb facade of Nabataean Petra in Jordan and Madain Saleh in Saudi Arabia should not only be examined as a phenomenon of tomb architecture but as a central component of Hellenistic architecture as a whole. At the same time, it emphasises the meaning of Hellenism as cultural interaction between the East and West.

However, these architectural façade formation stylistic components of Nabataean architecture acted as cultural links between the peoples of the east and west. Moreover, these architectural treatments created a new expression and direction of the architectural concept. This was later fully adopted by the architects of other eastern Hellenized regions, especially the application of "pictorial and scenographic" treatment in significant monuments, as seen in most of the rock-cut façades of the Nabataean Petra (Haddad, 1995, p. 70-71; 1999, p. 168-170; 2013; 2021; Haddad *et al.*, 2019). Based on the appearance of the pedimented doorway in Macedonia, this might indicate that the tomb façade formation in Petra flourished at least towards the end of the second century BC and during the first century BC.

There are many aspects of the particularity and creativity of Nabataean urban planning and architecture during the late Hellenistic and Roman periods. Crucially, we can argue that we can place the Nabataean temple Institution reflected in architecture as a multifaceted institution that mediated relations with the administrative authorities while acting as the main repository of a lively ancestral eastern tradition, which was constantly nurtured with new Hellenistic ideas and techniques drawn from a wide variety of the surroundings various cultures.

The Hellenistic conception of producing a "pictorial effect" opens a new vision of understanding the meaning of Hellenistic architecture (Haddad, 1995;1999, 2013; 2018). This signalled the form becoming independent from function; a phenomenon later developed in the Nabataean architectural conception in the façade formation to their aesthetic constitution, artistic experience and sense as an architectural experience cultural symbol. Thus, using different historical architectural layers, the architects, and builders of Petra, according to the particularities of the Nabataean, executed new decadent architectural treatments. Though the Assyrian crow steps at the top of the monument, followed by the Egyptian cavetto, then Hellenistic Attica and in the central part of the same façade, a Macedonian or Alexandrian Pedimented doorway, creating a new and unique architectural style of the late Eastern Hellenistic façade formation. However, to create this new stylistic aspect, the Nabataean used her three different historical architectural layers, making a sharp break with previous Greek architectural practices and focusing more on the eastern traditions while following the Macedonian and Alexandrian façade formation approach.

Finally, we can argue that western Hellenistic influences are reflected elegantly in the formation of the façades in terms of stylistics and aesthetic approach. At the same time, they had a limited impact on the functional and liturgical issues reflected in the layout arrangement of the plan reflected in the function and liturgy in the funeral and religious architecture. This can be interpreted by the strength of the local cultural heritage and its particularity in funeral and religious issues. In Nabataean architecture, we observe the following: cultural interaction, cultural interchange, cultural exchange, cultural adaptation, and cultural sharing. Cultural sharing is the symbolic exchange between divergent groups, peoples, nations, and societies. This cultural change and its reflection on the architectural products and practices were through their represented images over architectural and urban works and cities. For all these reasons, it was logically designated a World Heritage Site by UNESCO in 1985.

CONFLICT OF INTEREST

Author declare that they do not have any conflict of interest.

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Naif Haddad was born in May, 5, 1959. He obtained his B.Sc. & M.Sc. (H. Diploma) in Architecture & Planning in 1985, and the PhD degree in History/Architectural Heritage and Conservation from the Aristotle University of Thessaloniki, Greece, in 1995. Naif Haddad is a Full Professor, recently was the Dean of the Faculty of Architecture and Design (2017–2021) and the Dean of Scientific Research and Graduate Studies (2019–2021) at the American University of Madaba (AUM). In addition, recently, he has served as Acting President (Interim President) of (AUM). He is the Founder & Chairman of the Department of Conservation Science at Queen Rania's faculty of Tourism and Heritage at the Hashemite University (2001–2005) in Jordan, where he still serves as a faculty member. He is also a founding member of CulTech for Heritage and Conservation in Jordan (2012). In addition, he is a member of the National Committee for the Protection Architectural and Urban Heritage (2019–until now) by the Prime Ministry/Jordan. As a Consultant and Heritage expert, he

was involved in different international and local conservation, restoration and management projects. He worked as a historian architect and consultant in several excavations, research programs, and projects to document, interpret, restore, conserve, and reuse historic buildings and monuments in Jordan and Greece (as a permanent collaborator with Aristotle University excavations at Vergina and with I.Z. Trustees for Prehistoric and Classical Antiquities of the Greek Ministry of Culture). He has published more than 80 articles in refereed & indexed International Journals, books, and chapters in books. He is a reviewer of many International refereed Journals. His publications and research are in architectural heritage and classical studies, on ancient science and technology, 3D digital documentation, edutainment & Multimedia, conservation, and sustainable management of historical buildings, sustainable tourism planning & development. Parallel to his scientific research and heritage studies and projects, Professor Haddad has also worked in Multimedia as Co-manager, Consultant, Creative Director, Art Director and Scriptwriter of various T.V. productions, animated T.V. spots, documentaries, and outreach materials since 1997.