A Friday mosque founded in the late first century A.H. at al-Yamāmah.

Origins and evolution of Islamic religious architecture in the Najd

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Abstract

Archaeological excavations have only rarely documented the birth and development of religious Islamic architecture in the Ḥijāz and none had in the Najd. In this respect, the fieldwork conducted by the Saudi-French archaeological Mission in the oasis of al-Kharj (Central Arabia, 2011–2017) filled this gap by discovering and excavating the Friday Mosque at al-Yamāmah — ancient Jaww al-Khaḍārim, a major city in the al-Yamāmah region.

The five-year-long project revealed a late Islamic mosque (sixteenth–eighteenth century AD). Soundings and a careful examination of its floor proved it to have been laid over an early Islamic mosque (eighth–tenth century AD), itself built over pre-Islamic dwellings.

The stratigraphic sequence, architectural analysis, material study, and AMS radiocarbon dating at al-Yamāmah clarify the development of early Islamic Najdī religious architecture. This architecture is at the origin of a Central Arabian indigenous tradition, which received little influence from outside the Peninsula and remained unchanged until recent times.

Keywords

Najd; early and late Islamic periods; Islamic archaeology; Islamic religious architecture; mosque

Introduction

The al-Kharj oasis is located 70 km south-west of the capital of the Kingdom of Saudi Arabia, Riyadh. The area lies between latitude 23.8° and 24.4° N. and longitude 46.9° and 48° E.

Water resources from several of the largest aquifers of the Arabian Peninsula have made this area one of the most attractive regions of Central Arabia for sedentary communities.

A seven-year programme led by the joint Saudi-French archaeological Mission[1] aimed at studying the coevolution of man and the environment in this region from the Pleistocene to the modern era. By characterizing the diverse prehistoric, protohistoric, pre-Islamic, and Islamic archaeological remains, we attempted to understand the evolution of the settlement pattern and how people living in harsh climatic conditions developed original subsistence strategies in order to cope with this environment (Chevalier et al., in press; Crassard & Hilbert 2013; Hilbert et al. 2016; Monchot 2014; Monchot, Bailon & Schiettecatte 2014; Schiettecatte et al. 2012; 2013; Schiettecatte, Chabrol & Fouache 2016; Schiettecatte & al-Ghazzi 2016; in press).

[1] The archaeological study of this region began in 2011 thanks to the Joint Cooperative Agreement for Archaeological Surveys in the oasis of al-Kharj, signed by the Saudi Commission for Tourism and National Heritage (SCTH), Riyadh and the Centre National de la Recherche Scientifique (CNRS), Paris. Since then, a team has conducted six field seasons under the direction of Abdalaziz al-Ghazzi (King Saud University, Riyadh) and Jérémie Schiettecatte (CNRS, Paris).

This project led us to conduct archaeological excavations on the largest site of the oasis, al-Yamāmah (fifth century BC–eighteenth century AD). In this major ancient urban settlement, the Friday Mosque was identified during the first season, and entirely excavated during the following campaigns (2011–2016). Its study provided valuable evidence of the characterization of early Islamic regional religious architecture, related to the late Islamic Najdī architecture characterized by Geoffrey King (1978). This paper gives us an opportunity to present the results of this excavation and propose a global framework for the development of this architectural tradition.

The al-Yamāmah site

Al-Yamāmah is the largest ancient settlement reported in the region of al-Kharj. It is located in the centre of the oasis, west of the confluence of Wādī Ḥanīfah and Wādī Nisāḥ.

Its existence was first reported by H. StJ. Philby (1920: 168). Surveyed during the Comprehensive Archaeological Survey Program, the site was given the registration number 207-30 (Zarins et al. 1979: 27, 30). Soundings were carried out in the late 1980s by Abdalaziz al-Ghazzi for his PhD thesis, and a pottery typology was subsequently drawn up (al-Ghazzi 2010).

The archaeological area is located to the north-west of a village named al-Yamāmah, on the edge of palm groves. It is locally named al-Bannāʾ (literally 'the constructions').

The site is identified with the medieval city of Jaww al-Khiḍrimah (al-Askar 2002: 16; al-Juhany 2002: 45; Robin & Arbach 2016), which is probably the ancient Jawwān (*Gwn*), from the Sabaic inscriptions.[2] Today, al-Yamāmah is only used to name a village in the vicinity of the archaeological site. It is highly likely to be a legacy of the time when the ancient Jaww al-Khaḍārim was nicknamed al-Yamāmah (al-Masʿūdī 1864: 276–288).

The local authorities fenced off most of the archaeological area in the 1980s. However, outcropping structures are visible beyond the fence, to the north-west, the east, and the south-west, where a pottery workshop was excavated in 2016. The site is more than 75 ha wide (fig. 1).

Al-Yamāmah started to be occupied at the time when local communities settled in the alluvial plain and initiated an oasis-based agricultural economy, *c*. fifth century BC (Schiettecatte, Chabrol & Fouache 2016). Three periods of occupation were identified: fourth–third century BC, seventh–eleventh century AD, and fifteenth–eighteenth century AD. It is highly likely that the chronological gaps in this sequence correspond to a shift of the settlement elsewhere in the oasis, sometimes — but not systematically — equated to the contraction of the regional settlement pattern. The excavation of pre-Islamic and Islamic dwellings, of an early Islamic pottery workshop, and an early/late Islamic mosque highlights several aspects of daily life, material productions, architectural developments, and settlement process.[3] This paper only focuses on the early/late Islamic mosque, respectively Building 3 and Building 1, located in Area N6, to the north of the site.

The late Islamic mosque (Building 1)

During the first excavation season (2011), a deep stratigraphic sounding was undertaken along the slope of the major archaeological mound, in Area N6 (fig. 1). In its southern part,

[2] The place name Jawwān (*Gwn*) is associated with those of Kharjān (*Ḫrgn*) and Yamamatān (*Ymmtn*) in two Sabaic inscriptions: ʿAbadān 1, dated to 360 AD (Robin & Gajda 1994) and ʿIrāfa 1 from the fifth century AD (Gajda 2004).

[3] Schiettecatte & al-Ghazzi 2016; in press. See also the six extensive field reports available on the website https://halshs.archives-ouvertes.fr/

the north-west corner of a large columned hall was exposed. This construction was labelled Building 1 and soon proved to be a mosque (figs. 2–3).

Plan

The entire building is 41 m long and 29 m wide (fig. 4). The mosque enclosure is divided between an open courtyard (*ṣaḥn*) to the east and a covered prayer hall to the west. The remains of a portico (*riwāq*) run parallel to the northern wall of the courtyard. There are no traces of the foundations of a minaret or of a staircase to the roof. This absence is not unusual in late Islamic mosques of Central and Eastern Arabia: for example, al-Ghaṭghaṭ, al-Qaṭīf, al-Hufūf, Julfār (King 1978: 469; 1980: 254, 258; 1992: 48).

The prayer hall is a rectangle of 29 × 12 m.[4] The sanctuary roof rests on three colonnades running parallel to the qibla wall, each including ten columns. To enter the prayer hall, eleven thresholds were built between the columns. Two rows of flat stones were set in a mud mortar. Stones appear to have come from pits P. 185 and P. 186, dug for the reuse of building material from the previous Building 3.

This mosque had two mihrabs contained in the thickness of the wall, a large central one and a smaller one in the southern half of the qibla wall (W. 006). The central mihrab niche is rectangular and does not project onto the exterior surface of the qibla wall. No traces of a built *minbar* were found next to the mihrab except for a small plaster step in the last stage of occupation. The *minbar* was probably a movable wooden structure. In the southern end of the western nave, a massive mud-brick stepped podium (St. 089) functioned as a small staircase leading to a doorway in the qibla wall, in the south-west corner of Building 1;[5] it was bricked up during the last stages of occupation. In the southern end of the central nave, two walls added between abutments W. 034 and W. 035 and columns Co. 023 and Co. 024, delimit a large recess, which might have been used for the storage of books, manuscripts, or prayer mats.

There was space in each nave for *c*.32 to 37 worshippers (width *c*.0.7–0.8 m/worshipper). If an extra person was added between each column — in other words, another twenty people — the prayer hall could have hosted about 125 worshippers.

Stratigraphy

The stratigraphic sequence of Building 1 shows four stages of occupation of the mosque (Building 1-I to 1-IV), followed by the collapse and abandonment of the area (Building 1-V) (fig. 5).

Building 1-I: Building 1 was built above an earlier mosque (Building 3): after they were levelled off, the walls and pillars of Building 3 were used as the foundations for the construction of the new building. Peripheral walls were built above those of the previous mosque. Plaster floor F. 015, laid during the last stage of occupation of Building 3, was cleaned and restored with packed clayish earth. A semi-circular recess (Ni. 049) was dug in the southern part of the qibla wall; it could have been used as a second mihrab or a recessed

[4] These are rather large dimensions for late Islamic Friday mosques excavated in the Peninsula. Cf. the eighteenth–nineteenth-century mosque at al-Ruwayḍah (Qatar): prayer hall 12.5 × 6.5 m (Petersen et al. 2016: 334–335); the eighteenth-century mosque at al-Furayḥah (Qatar): prayer hall *c*.18 × 12 m (Rees, Richter & Walmsley 2011: fig. 4); or the fifteenth–seventeenth-century mosques at Julfār: prayer hall 20 × 20 m in Mosque 1 and 27 × 17 m in Mosque 2 (King 1992). Although larger, Julfār mosques had no courtyard.

[5] The presence of a second entrance to the mosque in the qibla wall was observed on several occasions, either to give access to a fortified building, e.g. Sudūs (Najd) (King 1978: 480), or for the personal use of the imam when entering the mosque, e.g. al-Mābiyāt (Ḥijāz) (al-Talhi et al. 1986: 59). See also the mosque at Khaybar (King 1986: 52).

minbar. The western and central rows of columns were built directly on this plaster floor; the eastern row of columns was built above the pavement of the courtyard of Building 3 (F. 253). A 15–30 cm-thick layer of orange aeolian sand gradually covered the entire surface of the prayer hall (fig. 5: Uf 030).

Building 1-II: parallel to the north wall of the courtyard, nine small columns were built above a thick, hard, and uneven surface. They are *c*.0.4 m in diameter. They delineate a covered portico (*riwāq*) bordering the northern side of the courtyard. A capital constructed of mud-bricks and large flat stones (St. 172) was lying in the sand and associated with the fallen shaft of a small column (Co. 193). Judging by the different fragments of this column and its capital, the minimum height of the small columns in the portico was 1.72 m. The capital has an inverted crowstep profile; it measures 80 × 70 × 36 cm.

In the prayer hall, a thin crust of clayish sand (F. 014) had hardened as a result of constant traffic and by the presence of mats. More than twenty footprints were found, as well as the imprints of palm-leaf mats. Floor F. 014 was gradually covered by a *c*.20–30 cm-thick layer of soft brown-orange sand punctuated by thin layers of crusty sand (temporary floors).

Building 1-III: this stage is characterized by the restoration of the mud-brick walls enclosing the two mihrabs (Ni. 160 and Ni. 049) after they collapsed; the bricking-up of the doorway in the south-west corner of the prayer hall; the application of a new mud coating on the qibla wall; and the replacement of two damaged columns with rectangular pillars (W. 032 and W. 067).

This phase of occupation is also characterized on the ground by a new floor (fig. 5: F. 046), a thin hardened sandy crust, patchily preserved and showing footprints and mat imprints.

At this stage, the columns of the portico as well as the walls of dwellings to the south of the courtyard had already collapsed. This stage bears the signs of makeshift repairs in a decayed building.

Building 1-IV: in the eastern row of columns separating the courtyard and the prayer hall, small mud-brick walls, five to six courses high, were built between the columns, except for the central part, thus restricting access to the prayer hall. These flimsy walls were built directly on a sand accumulation. A white plaster coating was applied on the walls of the mihrab.

The final remnants of this occupation level are represented by a crust of hardened sandy clay preserved in patches (fig. 5: F. 039). In the southern end of the eastern nave, footprints had left their marks in the mud and the remains of a palm-leaf mat were once again visible in the sand. Above floor F. 039, the sediment was a mix of natural aeolian sand deposit, collapsed mud-bricks from the superstructures, and degraded mud-bricks resulting from weathering of the collapse.

Chronology: a late Islamic mosque (16th–18th century)

The four architectural phases of Building 1 each date to the late Islamic period. Each one of them is characterized by architectural alterations, a new floor, and a new mud or plaster coating of the inner walls.

Radiocarbon dating (Building 1-I and 1-II): two samples of charcoal from Building 1-I layers and two others from Building 1-II layers were radiocarbon dated (respectively SacA36372 & SacA36375, and SacA36373 & SacA36374 — fig. 6). Both Buildings 1-I and 1-II yielded a sample dated to the early fifteenth–early seventeenth century and another to the late seventeenth–early twentieth century. The calibration plateau effect of the three last centuries does not allow a more accurate determination of the chronological range. Moreover, the

nature of the analysed charcoals is undetermined and an old wood effect cannot be ruled out. We can thus only consider these results as a *terminus post quem*.

Dating of the artefacts (Buildings 1-II and 1-III): within the time span determined by radiocarbon dating, a few artefacts point to an occupation mostly limited to the late sixteenth–eighteenth century:

In Building 1-II, a D-shaped post-medieval gunflint from a flintlock rifle (Y.086.2) belongs to a type of gunflint that was widespread from 1550 onwards (de Lotbiniere 1984: 206).[6] The presence of two lead musket bullets (Y.105.2 and Y.105.4) is consistent with this date.

In Building 1-III, Batavian ware was found, i.e. a porcelain cup fragment with underglaze blue painting on the inside and a chocolate glaze on the outside (Y.069.1). This 18th-century production from Jingdezhen (province of Jiangxi) is a well-attested import in the Gulf, at Zubarah (Carter 2011: 30, 260), al-Ruwayḍah (Petersen et al. 2010: 45; 2016: 343), and al-ʿAyn (Power & Sheehan 2012: 301; Power 2015: 12, 19). The presence of a clay pipe bowl (Y.043.1) is once again consistent with this date.

Reconstitution

Two reconstitutions of the roofing can be proposed. In a first, the columns bore a rough capital and thick roofing beams (fig. 7b), as described in a mosque at al-Buraydah (King 1978: 489). In a second reconstitution, the columns were surmounted by rectangular impost blocks on which keel arches supported a flat roof (fig. 7a). The reconstitution of keel arches is all the more probable because in the portico, north of the courtyard, the presence of a column along with its crow-stepped capital is strongly indicative of their presence (fig. 2, 7c). Most of the historical mosques of the Najd region uses arcades with keel arches, running parallel to the qibla wall and supporting the roof (King 1978: 467). There are close parallels with the mosques of al-Majmaʿah, Jalājil, Malham, Sudūs (King 1986: 135, 138, 143, 146), and am-Dakhiyyah (al-Raseeni et al. 2001: fig. 111).

Although there is no evidence of the roof itself, it is highly likely that it was made in the traditional Najdī way, with *Tamarix* beams, palm thatch, a layer of mud, and plaster.

The early Islamic mosque (Building 3)

Plan and stratigraphy

A closer look at plaster floor F. 015, at the base of Building 1, showed that it had been laid before the building of the columns, and that this floor abutted levelled mud-brick structures belonging to a former building. All these levelled structures (fig. 4: dark grey areas; fig. 8) constitute a former mosque, Building 3. The visible remains of the surrounding walls (north and south) and the remains of the plaster coating of the qibla wall on the ground indicate that Building 3 was almost as long and as wide as Building 1. Building 3 had only two naves separated by wall W. 188 in the southern half and by three pillars (W. 091–093) in the northern half (fig. 8). The prayer hall measured 29 × 11 m.

Two soundings were opened within the prayer hall in order to gain a clearer understanding of Building 3 and other previous occupations: Trench A in the southern end of the central nave, and Trench B in the northern end of the western and central naves (fig. 3). Three pits dug in

[6] D-shaped in plan and wedge-shaped in cross section, these gunflints usually correspond to seventeenth–eighteenth-century productions and the present artefact is comparable to similar gunflints found in seventeenth–eighteenth-century wrecks: *La Belle* (1684) (https://www.thestoryoftexas.com/la-belle/the-exhibit/artifacts; accessed 5/12/2017); HMS *Dartmouth* (1690) (de Lotbiniere 1984: fig. 2a); and *Doddington* (1755) (1984: fig. 2c).

F. 015 (P. 185–187) were emptied, which also enhanced the picture of previous occupations (fig. 9). The purpose of these pits was the reuse of materials from Building 3 during the construction of Building 1. Our soundings showed that:

- Building 3 had three successive occupations, each being characterized by a distinct plaster floor. They are, in chronological order, F. 192 (Building 3-I), F. 182 (Building 3-II), and F. 015 (Building 3-III) (fig. 9);

- In Building 3-II, the spaces between pillars W. 091, 092, 093, and St. 216 were closed by a wooden screen whose anchorage system was a grooved plastered trench (St. 288) dug in floor F. 182 (fig. 8: left, fig. 10c). When F. 015 was laid above F. 182 and St. 288, this wooden screen was removed. This device can be interpreted as a *maqṣūrah*, i.e. a screen delineating an enclosed area in a mosque reserved for the use of the ruling elite, and well known in the Baṣrah, Kūfah, Damascus, and Fusṭāṭ mosques (Bloom & Blair 2009: 461–462: 'Maqṣūra'; Pedersen et al. 2012);

- In Building 3-III, plaster floor F. 015 and the plaster coating on the walls are visible in the mihrab. They show an early Islamic mihrab having a similar shape as the late Islamic one. The latter was simply a direct continuation of the early Islamic mihrab. Moreover, floors F. 192 and F. 182 are visible below F. 015 within the mihrab, which means that Building 3-I and Building 3-II already had a mihrab whose shape cannot be determined.

- In Building 3-III, the plaster coating on the walls shows traces of yellow and dark red paint;

- On plaster floor F. 015, twenty-eight engraved game boards were visible (see distribution on fig. 8, right). Three distinct categories were observed: the alquerque or *qirkat*, the game of 'fourteen' (a kind of mancala game), and a chessboard. This plaster floor was in use in both Building 1 (late Islamic) and Building 3 (early Islamic). However, since the game boards are often covered by the columns of Building 1, we can assume that they were carved during the occupation of Building 3.

Chronology

Since Building 3 was levelled, sherds and artefacts were rare and none of them provided chronological information. The occupation of Building 3 was only dated by ^{14}C analyses of wood charcoals sampled in the plaster of the floors (fig. 6).

Building 3-I: the first floor of Building 3 (F. 192) was dated to cal AD 665–759 (SacA47097: 1290 ± 30). The sample was the carbonized fragment of a small branch of *Tamarix*; an old wood effect is highly unlikely and the dating is considered to be reliable.

Considering the presence of a central mihrab in Building 3-I (see above), the construction should rather be dated to the second half of the radiocarbon date range, that is, the first half of the eighth century AD, at a time when projecting niche mihrabs appeared and spread in Islamic religious architecture (Fehérvári 1993).

Building 3-II: it was not possible to date the second floor (F. 182) as the charcoal sampled from it was insufficient to provide a result.

Building 3-III: the third floor (F. 015) was dated thanks to two fragments of date-palm trunk. The first was dated to cal AD 680–873 (Ly-9732: 1245 ± 30), the second to cal AD 719–942 (SacA47098: 1195 ± 30) with a high probability for cal AD 766–896 (94%).

Building 3, therefore, was confidently built during the Umayyad period and went through two major phases of restoration. The latter possibly happened after the ʿAlawī leaders of the Banū al-Ukhayḍir established themselves as rulers in al-Yamāmah, from 866 AD onwards, and

made Jaww al-Khiḍrimah their residence (al-Askar 2002: 139–140; al-Juhany 2002: 45–50). Two centuries later, *c*.1051 AD, Naṣir-i Khusraw described the inhabitants of al-Yamāmah as ʿAlids, belonging to the sect of the Zaydīs (Nāṣir-i Khusraw 1881: 224). Except for the disappearance of the *maqṣūrah*, these changes of obedience had no visible impact on the local religious architecture.

Reconstitution

A first hypothesis shows a level roof resting directly on walls and piers (fig. 10a). An alternate hypothesis is suggested by the presence of four cruciform pillars east of the prayer hall (W. 201, 203, 121, and 214); their pilasters may have been supporting brick arches (fig. 10b). However, if this is structurally conceivable, we should bear in mind that so far 'the round-headed or the pointed structural arch is unknown in the local architecture, and where it exists in Saudi Arabian territory, seems to owe its presence to external influence' (King 1978: 494).[7]

A previous occupation below the early Islamic mosque

In the different trenches opened in and around the mosque, almost everywhere below the Islamic layers, an aeolian sand accumulation, up to 1 m thick, shows an absence of continuity with the previous occupation. Only Trench B (fig. 3: location; fig. 9: section), in the prayer hall, showed a succession of architectural phases (Buildings 4, 8, and 9) below the early Islamic mosque (Building 3). Pottery sherds from these previous architectural phases are homogeneous and similar to those generally found in fourth–second-century BC contexts at al-Yamāmah.[8] There was nothing to indicate a late antique occupation.[9]

Four samples were radiocarbon dated in the deepest layers of Trench B (Uf 156 — Building 9) and Trench D (Uf 148 — Building 5). They all indicate the same chronological range in the fourth–third century BC (fig 6).

Discussion — Origins and development of early Islamic Najdī religious architecture

The early Islamic mosque (Building 3) at al-Yamāmah was built ex nihilo, probably in the early eighth century AD. Its shape was not constrained by a previous building or by the urban fabric. In this respect, it offers a rare insight into the early Islamic religious architecture in the Najd. This building enriches a growing corpus of excavated early Islamic mosques in the Najd and Ḥijāz including:[10]

- Al-Yamāmah, central Najd: Friday mosque dated to the eighth–eleventh century AD;
- Fayd, northern Najd: Friday mosque dated to the 'early Islamic period' (unpublished);
- Al-Rabadhah, central Ḥijāz: western mosque on site C dated to the ninth–tenth century AD (al-Rāshid 1986: 22);

[7] A ceiling supported by an arcade is an architectural tradition which spread in the southern part of the Peninsula (Oman, Yemen), e.g. the mosque of Qalhāt (Rougeulle, Creissen & Bernard 2012: 347), and the numerous examples published by P. Costa: Bahlā, al-Shawādhnah, Nizwā, Manaḥ, etc. (Costa 2001).

[8] See Sounding 1 (Mouton, Schiettecatte & Charloux 2016), Sounding 4 (Cuny & Schiettecatte, in press), Trench D (Schiettecatte et al. 2016: 53–96).

[9] So far only textual sources mention the late antique (fourth- to sixth-century AD) occupation of the oasis (Robin & Arbach 2016).

[10] The mosque of ʿUmar bin al-Khaṭṭāb at Dūmat al-Jandal is excluded from this section because of the uncertainty surrounding the date of its construction (Charloux 2012: 41–43).

- Jarash, southern Ḥijāz/ʿAsīr: Friday mosque dated to 'the early Islamic period' (al-Zahrani et al. 2017); the excavation yielded ninth–tenth-century pottery material;
- Al-Ukhdūd (southern Ḥijāz/northern Yemen): *c*. seventh–ninth century AD (al-Zahrani et al. 2001: 17–18).

Interestingly, with the exception of the small mosque at al-Ukhdūd, all these buildings share features, which reveal a common early Islamic architectural tradition in both the Ḥijāz and the Najd (fig. 11):

- A rectangular prayer hall, *c*.20 to 30 m large (al-Yamāmah: 29 m; al-Rabadhah: 22.75 m; Fayd: 22 m; although the dimensions at Jarash are not given, the building looks similar in size);
- Two to three colonnades running parallel to the qibla wall;
- A prayer hall retaining the characteristics of the *līwān*, stretched along the entire length of the qibla wall and separated from the courtyard by a set of openings;
- The absence of a minaret;
- From the eighth century onwards, a mihrab making a projection on the exterior surface of the qibla wall;
- Few decorations, except for the (painted) plaster coating of the qibla wall.

These features define an early Islamic type of mosque specific to both the Ḥijāz and the Najd which, unlike the Syrian, Iraqi and Omani mosques, shows no influence either from outside the Peninsula or from the pre-Islamic South Arabian religious architecture (Costa 2001: 225–227; Bandyopadhyay & Sibley 2003). They reflect the common standard for the Islamic religious architecture which was likely established during the caliphate of ʿUmar ibn al-Khaṭṭāb (Johns 1999).

The early Islamic great mosque of al-Yamāmah probably fell into decay after the end of the eleventh century AD, at a time when there is no evidence at all of any occupation. In the sixteenth century AD — perhaps slightly earlier — the remains of this building were levelled off and served as a base for the construction of the late Islamic mosque. The architecture of the latter shows how limited the architectural skills of the builders were: plaster floor F. 015 of Building 3 was used as a support for the over 1 m-wide columns of Building 1; they had no foundations and were — unnecessarily — excessively large. Nevertheless, the interest lies in the permanence of the previous architectural features. In addition, the sixteenth-century mosque at al-Yamāmah introduces one of the most significant features of nineteenth–twentieth-century Najdī traditional religious architecture, namely the use of keel arches to support a level roof.

Although the late Islamic mosque at al-Yamāmah does not already show all the features of nineteenth–twentieth-century Najdī traditional religious architecture[11] — the staircase to the roof of the prayer hall, generally accompanied by rectangular minarets; the minbar; and a protruding mihrab were not identified during excavation — it is the missing link that bridges the gap between early Islamic Najdī and Ḥijāzī religious architecture and nineteenth–twentieth-century Najdī religious architecture (Fig. 11).

[11] The traditional mosques of the Najd are mainly characterized by a rectangular, flat-roofed sanctuary built against the qibla wall occupying half the mosque enclosure, and an open courtyard filling the rest of the enclosures; one or more colonnades running parallel to the qibla wall; the use of unfired mud-brick; a finish in mud or plaster; a decoration confined to the mihrab alone; arcades formed of keel arches running parallel to the qibla wall; and a mihrab protruding beyond the line of the qibla wall (King 1978: 493–494).

In this respect, although he had no archaeological data on which he could base his argument, Geoffrey King was perfectly right when he stated that:

> Certain types of Saudi Arabian mosque are related to Islamic architecture traditions which have arisen outside the peninsula whereas other mosques seem to derive from an indigenous Arabian tradition of building. It may well be that these indigenous Arabian mosque traditions preserve very early Islamic forms that perhaps have undergone little evolution over centuries (King 1986: 189).

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Captions

Figure 1: al-Yamāmah: topographic map of the site (M. Niveleau and J. Schiettecatte, Saudi-French Archaeological Mission in al-Kharj).

Figure 2: al-Yamāmah: aerial view of Building 1, the prayer hall, and the courtyard at the end of the fourth season, 2015 (Th. Sagory, Saudi-French Archaeological Mission in al-Kharj).

Figure 3: al-Yamāmah: digital elevation model of Building 1 and the surrounding area, and location of the soundings and trenches (J. Schiettecatte, Saudi-French Archaeological Mission in al-Kharj).

Figure 4: al-Yamāmah: plan of Building 1 (light grey), Building 3 (dark grey) and the surrounding area (J. Schiettecatte, Saudi-French Archaeological Mission in al-Kharj).

Figure 5: al-Yamāmah, Building 1: stratigraphic section of the western and central naves of the prayer hall, from east to west (drawing: P. Siméon; graphics: J. Schiettecatte, Saudi-French Archaeological Mission in al-Kharj).

Figure 6: al-Yamāmah (area N6), Buildings 1 and 3 and Trenches B and D: AMS dating on charcoals. Calibration programme: Stuiver M., Reimer P.J. & Reimer R.W. 2017 CALIB 7.1 (www program). Available at http://calib.org (accessed 11/22/2017). Calibrated with IntCal13 curve (Reimer et al. 2013).

Figure 7: al-Yamāmah: reconstitution of Building 1: a) flat roof supported by keel arches; b) flat roof supported by beams; c) reconstitution of the portico in the courtyard (Ch. Darles, Saudi-French Archaeological Mission in al-Kharj).

Figure 8: al-Yamāmah: plan of the early Islamic mosque: Building 3-II (left) and Building 3-III (right) (J. Schiettecatte, Saudi-French Archaeological Mission in al-Kharj).

Figure 9: al-Yamāmah, Trench B: southern section drawing with the main architectural phases highlighted (drawing: P. Siméon; graphics: A. Emery, Saudi-French Archaeological Mission in al-Kharj).

Figure 10: al-Yamāmah: reconstitution of Building 3: a) flat roof supported by wooden beams; b) flat roof supported by arches; c) reconstitution of the *maqṣūrah* (Ch. Darles, Saudi-French Archaeological Mission in al-Kharj).

Figure 11: Plans of early Islamic Najdī and Ḥijāzī mosques and late Islamic Najdī mosques (after Creswell 1969; King 1978; al-Rāshid 1986; al-Rusainy et al. 2005; al-Subhan 2006; al-Zahrani et al. 2001).

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