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The protohistoric and antique landscapes of Qaryat al-Faw. The Saudi Heritage Commission Archaeological Mapping Project (2021–2022)

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Summary
Qaryat al-Faw was the capital city of successive major tribal principalities, and a key commercial centre in the south of the Arabian Peninsula in antiquity. The site was rediscovered in the early twentieth century and has been excavated by King Saud University (KSU) since 1972. In 2021–2022, in view of its nomination for inscription on the UNESCO World Heritage list, the Saudi Ministry of Culture commissioned RCHeritage to initiate urgent conservation studies, and conduct preliminary research to optimize site conservation. This work involved a reappraisal of the archaeological mapping of the site. Preliminary surveys revealed the overall organization of the micro-region during the different occupation periods, in particular a strongly connected network of avenues, necropolises, and water sources in protohistory, and a concentrically organized oasis in antiquity, surrounded by a palm grove with thousands of plantation pits watered by a channel network, a fort/caravanserai area, and an open-air sanctuary.

Keywords: Arabian oasis, pre-Islamic city, Bronze age necropolis, avenues of tapered structures, prospection

Introduction

Qaryat al-Faw (henceforth al-Faw) is one of the best-known archaeological sites in Saudi Arabia, and certainly one of the richest, in spite of its isolated location on the western margin of the great Rubᶜ al-Khālī desert (Fig. 1). After several preliminary articles and books (al-Ansary 1979; 1982; 1984; 1997; 2002; 2010; al-Ansary & Tayran 2005; Ghoneim 1980), the long-awaited final publication of the excavation report brought to light the impressive extent of the work accomplished by teams from King Saud University (KSU) (al-Ansary 2019; 2021). Excavations began some fifty years ago that have uncovered exceptional archaeological, architectural, and historical material demonstrating the major regional, political, and commercial role played by the capital city of tribal principalities (notably Qaḥṭān and Kinda) in antiquity (al-Ansary 2010).

In preparation for the nomination of the site to the UNESCO World Heritage List, the Saudi Ministry of Culture commissioned a comprehensive mapping project of al-Faw and its surroundings to the RCHeritage through a partnership with the French National Centre for Scientific Research (CNRS) and Éveha International. While the historic core — notably the 'ancient town' and the surroundings of the 'Suq' — has received full attention from the KSU teams over the past decades, the recent mission provides a broader approach to the landscape of the site during the two main settlement periods — protohistory and antiquity. It also puts into perspective former and more recent exceptional discoveries, such as the avenues of tapered structures, the sacred sector of Khashm Qaryah, the caravanserai sector, and the extent of the oasis. This work also aims to protect local monuments and to plan development and heritage management strategies.

Historiography

The site was rediscovered by engineers from the American Oil Company at the beginning of the twentieth century. The British explorer H.St J. Philby first heard of al-Faw in 1936 and subsequently published a short description of the site (Philby 1949). In 1952 the Philby-Ryckmans-Lippens expedition went to al-Faw (Lippens 1956; Ryckmans 1957; see Robin 1988: 167–168). In the

Figure 1. *The al-Faw site, facing north-east (©QFAP, T. Creissen).*

1960s Jamme published a corpus of inscriptions and graffiti (1966; 1967; 1970; 1973). After several visits in the late 1960s, al-Ansary began excavations there in 1972 (1982; 2019). The richness of the local inscriptions quickly triggered general interest in the site (Ryckmans 1949; 1951; 1957; Lippens 1956; Beeston 1976; 1979; Wissmann 1964; Jamme 1966; 1967; 1970; 1973; Garbini 1976; Masry 1977; Robin 1988; 2010; al-Sheiba 1987; al-Ansary 2002; Bukharin 2009; al-Jallad 2014; al-Said 2018; 2019). The rock art, on the other hand, was little studied (Field 1970; al-Ansary 2019, i/a & c). A PhD thesis on protohistoric funerary structures — previously identified by Philby (1949: 90) and Field (1970: 44) — was recently submitted in Riyadh (al-Otaibi 2018) and synthesized in a paper with S. Laursen (Laursen & al-Otaibi 2022). Finally, a Saudi-French mission led by M. Arbach (CNRS) carried out investigations further north of the site at Fardat al-Faw (Arbach & Tayran 2022).

Geographical context

The site of al-Faw is located 70 km south of Wādī Dawāsir at the junction between the sand desert of Rubʿ al-Khālī, a Quaternary aeolian formation on a Jurassic substratum (200–145 My), and the Permian Wajīd sandstone outcrops (300–250 My) (Bramkamp, Gierhart & Owens 1963). Al-Faw lies at around 710 m a.s.l., upstream of Shaʿb al-Faw, at the entrance of Wādī al-Ḥinū, on the road leading from Yemen and Najrān to central and eastern Arabia. In antiquity, the main caravan route passed through the well-known sites of Biʾr Ḥimā to the south and al-Aflāj to the north, and today through the modern town of al-Sulayyil (Zarins, Rahbini & Kamal 1982; Potts 1988: fig. 1).

The ancient site is located on the western margin of an important Quaternary sand calcified crust (or sand *levée*) extending southwards along the eastern plateau (Fig. 2). This sand *levée* seems to have formed as a result of the conflict between the water running northwards in the wadi and the water running down from the eastern terrace (a combination of spring outflow and rain runoff). The sand *levée* at the site is calcified and hardened. Its surface is very irregular, which can be partially explained by intense human activity, consisting of numerous pits and channels dug into this sediment, and also by natural processes. Future micromorphology and other analyses will be necessary to fully understand its formation process.

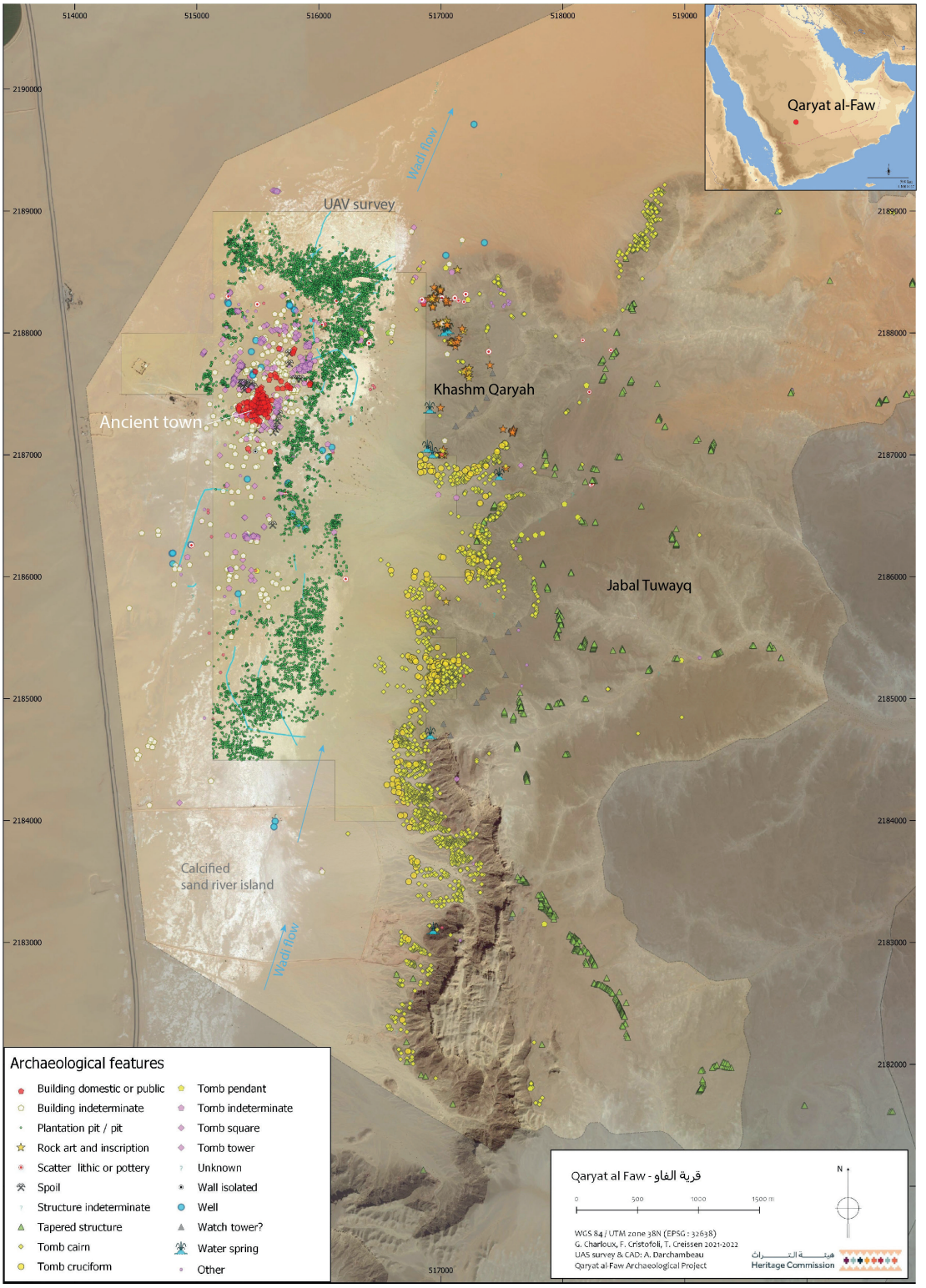

Figure 2. *A preliminary archaeological map of the al-Faw heritage site (©QFAP, G. Charloux, A. Darchambeau, A. Wadel).*

The Pleistocene alluvial plain continues to expand further west and is now covered with aeolian sand. To the east, the site is bordered by the high escarpment of Khashm Qaryah (lit. 'the nose of Qaryah') which extends the Jabal Tuwayq, and which protected the oasis from aeolian Quaternary sand deposits from the desert of ʿUrūq Banī Muʿāriḍ to the east. The plateau itself is formed of red sandstone at the base, covered by grey-white limestone deposits. Water percolated through the calcareous plateau, fissuring and eroding the top of the terrace. Numerous small resurgences, as well as two larger water springs, were identified along the terrace during the geoarchaeological survey. One of these springs, ʿAyn al-Ḥawāmiyah, is mentioned on the regional geological map (Bramkamp, Gierhart & Owens 1963). The springs take the form of dried waterfalls. The few known wells indicate that in the past groundwater supplied the site and the agricultural sectors of the oasis. These springs and aquifers were auspicious to the human occupation and development of the site. Despite the aridification of the region, a wide plain to the north-west of the site is still heavily cultivated, owing to the exploitation of the aquifer. Today, the climate in this area is arid to hyper-arid, with an annual rainfall of <100 mm, and often <30 mm (Matter et al. 2016; Almazroui et al. 2012).

Survey methodology

Complementary approaches were used during the first season of the Saudi Heritage Commission Archaeological Mapping Project in the area: geoarchaeology, geophysics, archaeological survey and excavations, aerial imagery, and remote sensing. This led to the preliminary mapping of all the field and aerial data in a geographic information system (GIS) built with the open-source databases Quantum GIS and PostgreSQL. The initial recording stage was based on the results of previous KSU studies and preliminary aerial identifications on satellite imagery. On site, all the archaeological data were recorded in real time using the Qfield app running on Android devices synchronized with our PostGIS database using a 4G network. Given the size of the al-Faw site boundaries today (*c.*5000 ha, *c.*6 x 11 km), we used a virtual grid square (500 x 500 m) for UAS photographic survey, georeferenced by ground control points with a GNSS device using UTM38N. The resulting orthophotographic imagery (1.5 to 2 cm/pix) processed with Agisoft Metashape pro, combined with the implementation of an online recording system, gave rise to a rapid inventory of the structures. The digital elevation model (DEM) and contour lines (at 0.5 m) were produced at the same time, providing a high-quality archaeological contextualization and an accurate understanding of the topographical environment. The geophysical survey was based on magnetic gradient measurements in four test areas to assess feasibility for future surveys. The magnetic contrast turned out to be too weak to identify any structures conclusively.

So far, remote sensing techniques and field surveying have resulted in the identification of 11,986 archaeological features (Fig. 3): 98% through remote sensing (2% of which were verified in the field) and 2% new features identified in the field only. Plantation pits constitute the majority of these features (71%).

The protohistoric landscape

Flint tools on the surface of the Jabal Tuwayq plateau, visible as a result of deflation-type erosion, are the oldest traces of human activity at al-Faw (al-Ansary 1982; 2019, i/a: 27–32; 2019, 1/c: 68–82). They date back to the Middle/Late Palaeolithic, and more often to the Neolithic periods. An interesting discovery from the 2021 season is a very dense Neolithic flint scatter (QF09029) comprising scrapers, burins, blades, and arrowheads. Cores and flakes were spread over the ground, indicating that the site was used for stone tool production.

More significantly, among a wide variety of recorded remains (including stone circles, hearths, standing stones, etc.) (e.g. al-Ansary 2019, i/a: 32–38), avenues of tapered structures, and graveyards with monumental tombs markedly shaped the protohistoric landscape of al-Faw (Fig. 4).

Avenues of tapered structures

Previously identified by the KSU team and others (al-Ansary 2019, i/a: 36–37; 2019, iii/c: pls 96–101; Zarins et al. 1979: 24–29; 1980: 24–25; Whalen et al. 1981: 50; Nayeem 1990: 75–76), tapered structures in the al-Faw

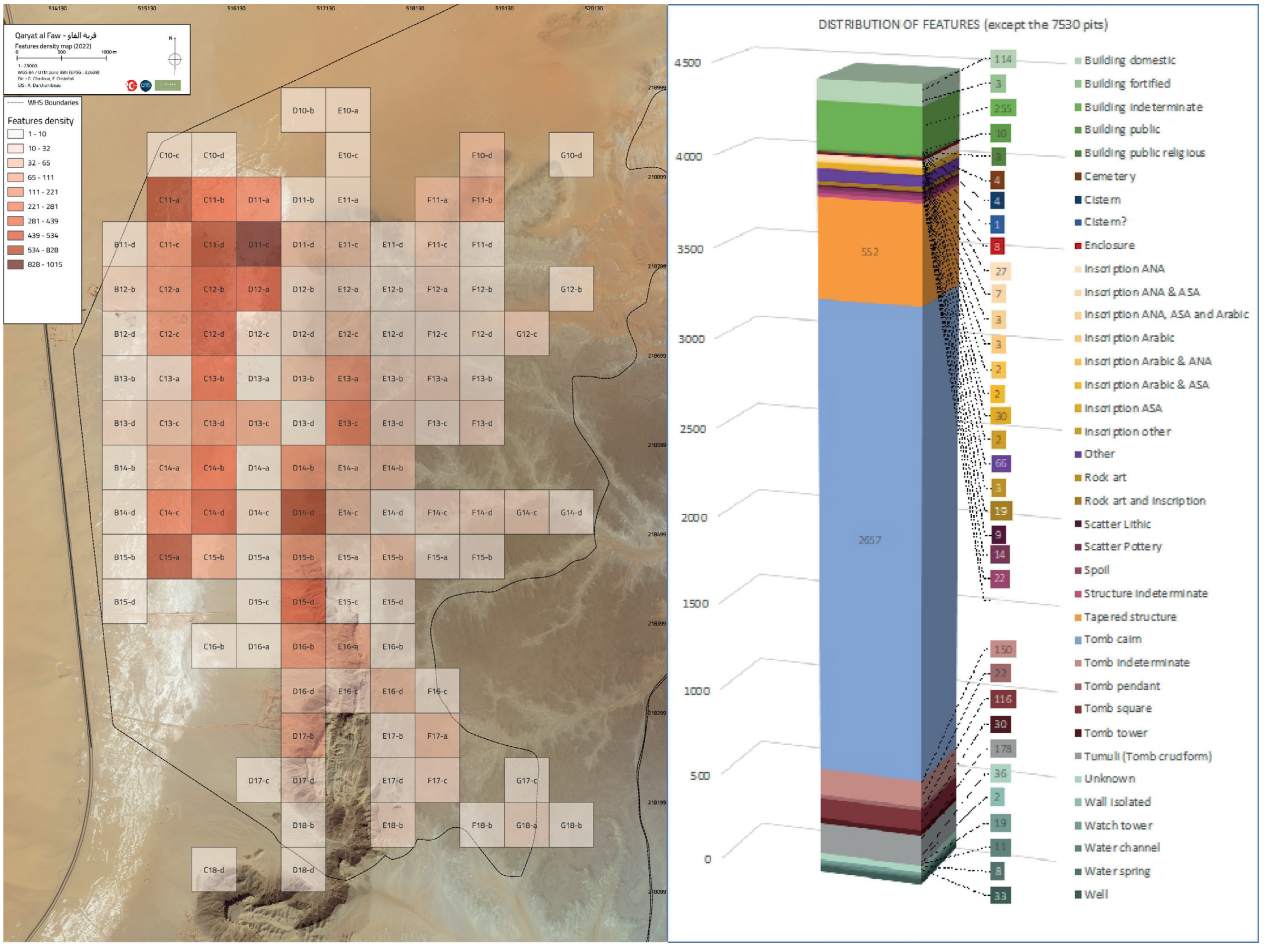

Figure 3. *A density map and diagram of recorded features (©QFAP, A. Darchambeau, A. Wadel).*

region — which may also be identified as tapered pendants — are characterized by a hollow triangular head delimited by uncut stones with a tail (Fig. 5). They vary in length from about 1 m up to 70 m. They are often associated with smaller neighbouring features, such as circular areas cleared of surface stones (Fig. 5, top), or nearby heaps of stones, hearths, and others, but the connections between these various features require further study. Most of the time, no bones, pottery, or lithics were found in or in the vicinity of these tapered structures. Based on a larger sample of structures, Zarins suggested that their function was not funerary (Zarins et al. 1979; 1980: 24). However, this could also indicate distinct practices in the al-Faw area. In the al-Kharj region, tapered structures excavated at ʿAyn al-Dilaʾ contained a burial chamber in the middle of triangular heads (Chevalier et al. 2021). Nevertheless, the type of tapered structures encountered at the latter site, with a larger filled head and tail, should probably be distinguished from the al-Faw structures. The geographical extent of tapered structures seems to be restricted to central-south Arabia (cf. Zarins et al. 1980: fig. 2; Whalen et al. 1981: 50; Gilmore, al-Ibrahim & Murad 1982: 16; absent in Dalton et al.'s typology for central Hijaz [2021: fig. 3], but comparable to D. Kennedy's derivative 'Trumpet tombs' [2011: fig. 15/c]).

We have recorded 552 tapered structures within the current site limits of al-Faw. They are clearly concentrated on the plateau, at the edge of the Jabal Tuwayq. A few of them are also scattered around the

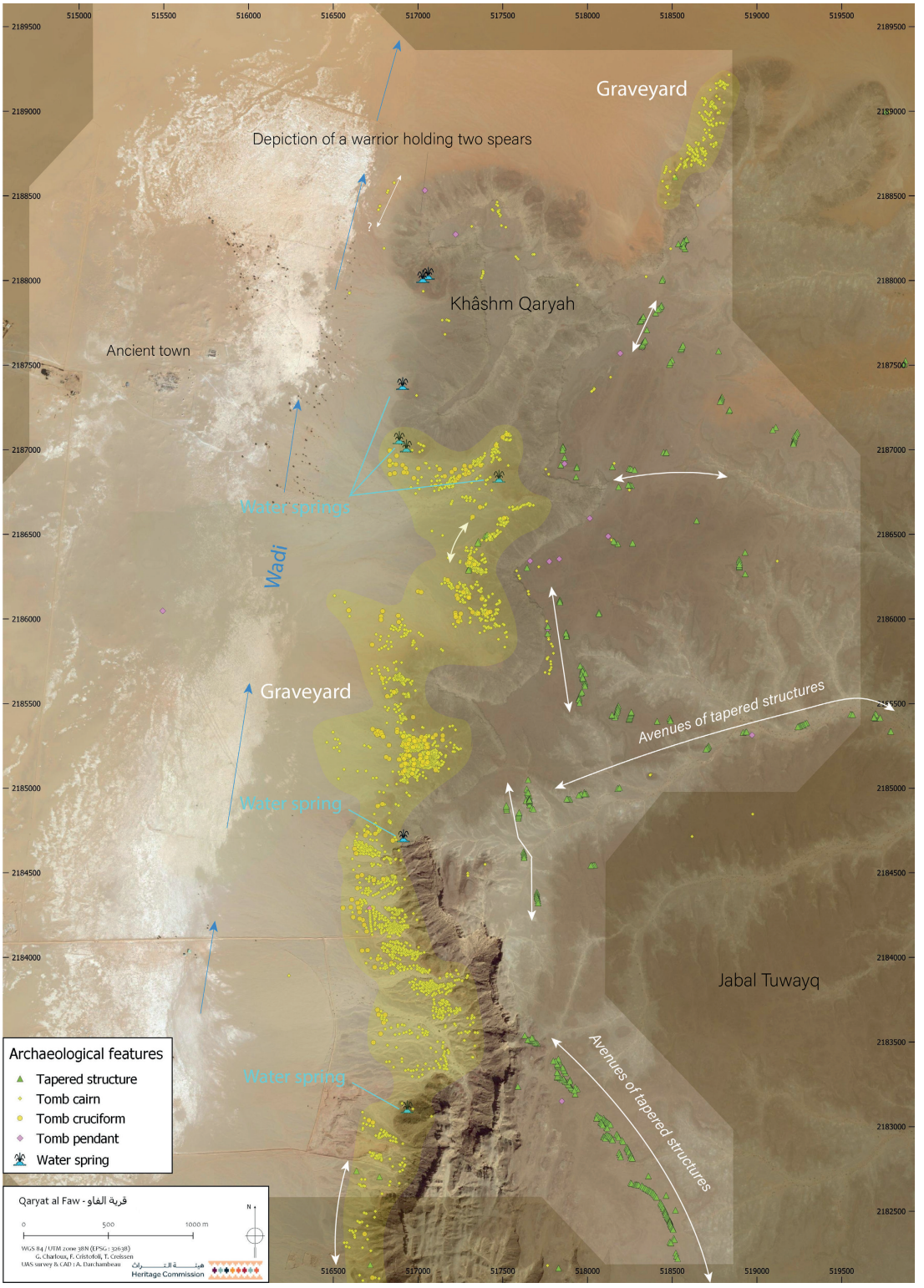

Figure 4. *A map of the al-Faw protohistoric landscape (©QFAP, CAD G. Charloux).*

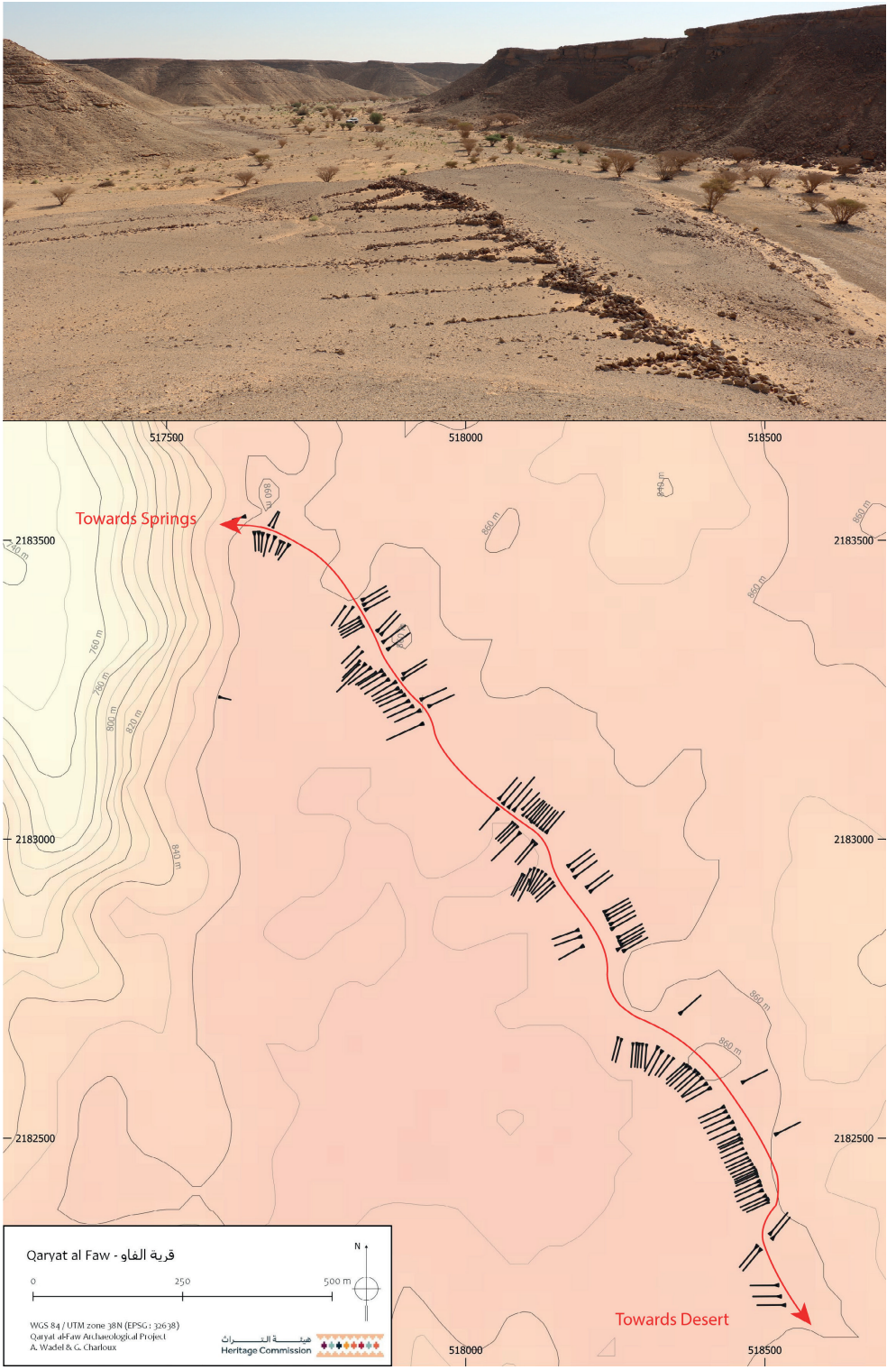

Figure 5. Top: *tapered structures on the plateau with avenue, facing south;* **bottom:** *an example of a ceremonial avenue of tapered structures in south-east al-Faw (©QFAP, T. Creissen [top], A. Wadel & G. Charloux [bottom]).*

foot of the plateau. Their distribution highlights the presence of simple lines of structures, but also of real 'avenues' made up of groups of tapered structures on either side of a central path. Most of them are grouped in clusters of two or three and up to dozens of structures. At least five segments of avenues/alignments can be identified, three of which are over 1.5 km long, and at least one follows the base of the Jabal Tuwayq towards the south. These 'avenues' seem to be directed towards the depressions leading to the water springs at the foot of the plateau. They radiate on the east side of the site from south to north, but not on the western erg which is devoid of stone-building material. A similar configuration of monumental drystone avenues radiating towards oases has already been observed in the northern Hijaz (Kennedy D 2011: 3202; Dalton et al. 2021), where hundreds of avenues of pendants (without tapered pendants) sometimes extend over dozens of kilometres (Dalton et al. 2021: 11, figs 3, 5, 7).

These recent investigations significantly clarify the broad chronological post-Neolithic range of these remains (Zarins et al. 1979; 1980, Whalen et al. 1981). On the one hand, the excavation of a tapered structure at ʿAyn al-Dilaʾ yielded a bone dated by bioapatite to 2027–1887 BC (Chevalier et al. 2021: 141, n. 26). On the other, the recent study of funerary avenues of pendant tombs in the northern half of the Hejaz, showed that construction and use spanned the range 2600–2300 BC at least (Kennedy MA et al. 2021: 10). This parallel between monumentalized avenues in these two nearby regions certainly implies a certain synchronism, even though the types of drystone pendants are quite distinct. By analogy, it seems possible to date the constructions of tapered structures at al-Faw to this transitional phase of the second half of the third millennium. The continuation into the early second millennium BC (but possibly for a tapered structure subtype [Kharj]) appears reasonable.

The presence of avenues between the desert and the watered area attests to periodic circulation between these two spaces, as was also observed in the Hijaz (Dalton et al. 2021: fig. 6). Each avenue indicates transhumance routes in different directions around the oasis, perhaps by distinct groups, but also by the same groups in different directions according to need. Dalton et al. (2021: 11–13) explained the periodical movement into surrounding landscapes by the periodic availability of water. This cycle must have been inextricably linked to the sepulchral and collective character of the place, and must also have led to periodic rotations between the burial area and the desert.

The funerary landscape of tumuli and cairns

During the protohistoric period, the other major landscape feature of al-Faw is the graveyard of cairns and tumuli at the western base of Jabal Tuwayq, built with construction material available on site (Fig. 6, top). We counted 2857 tombs located on preserved colluvial fans rising above runoff areas. They can be classified into three broad categories: 178 tumuli (or 'cruciform tombs'), 2657 cairns, and twenty-two pendant tombs (cairn with tail). Several cairns scattered across the landscape cannot be specifically associated with the protohistoric graveyard. In the absence of systematic excavation, we have arbitrarily distinguished tumuli from unspecified cairns based on their diameters (up to 10 m). The former spread along a north–south axis at the western edge of the cairn fields, down the plateau. These tumuli are *c.*10 to 25 m in diameter, less than 2 m high, with only one storey and possibly truncated. Their internal architecture is more complex: limited by an external ring wall, they are circular with a central cross-shaped corridor dividing the structure into four burial chambers (al-Ansary 2019, i/a: 34–35; 2019, i/c: 20, 86–93). This cruciform shape is reminiscent of northern examples known from the cemeteries of Taymāʾ and as far north as Mesopotamia (Hausleiter & Zur 2016; Laursen & al-Otaibi 2022). The al-Faw tumuli fit well into a regional pattern of the monumentalization of funerary structures, observed in eastern Arabia and Mesopotamia from the end of the third and the beginning of the second millennium BC (Kepinski 2007; Méry 2010; Laursen 2017). The smaller size of the cairns does not preclude a cruciform spatial organization similar to that of the tumuli, or T-shaped chambers.

Among these tombs, one was excavated by the KSU team (al-Ansary 2019, i/a: 34–35; 2019, i/c: 83–93) and seven others by al-Otaibi (2018: 184–196, fig. 13). A recent study of the artefacts uncovered by Laursen and al-Otaibi (2022) dated the tombs to *c.*2000–1900 BC, and significantly revealed close links between the populations buried at al-Faw and those of the Dilmun region (Bahrain, al-Ahsa). According

Figure 6. Top: *a graveyard of tumuli and cairns;* **bottom:** *a panel with a warrior holding two spears, possibly from the Middle Holocene period (©QFAP, T. Creissen [top]; J. Schiettecatte [bottom]).*

to the above-mentioned authors, the typical Dilmun L-shaped funerary chamber is absent so far, and the dry mummification practice, also observed in north Arabia, is atypical in the Dilmun area (Laursen & al-Otaibi 2022). However, the spearhead-in-wall-praxis at al-Faw consisting of 'inserting two copper spearheads in the head end of the chamber wall' establishes a clear link with the Dilmun cultural sphere. The presence of copper spearheads, the Dilmun burial jar found in Tomb A1-2 and four Gulf and Dilmun stone seals also confirms a direct connection with north-eastern Arabia in the early Dilmun period (Laursen & al-Otaibi 2022; see also al-Ansary et al. 2019, i/c: 32–44; al-Otaibi 2018). The grave-goods and funerary architecture are indicative of long-distance contacts from eastern Arabia to Yemen through the Jabal Tuwayq, and a 'diaspora of Dilmunites and perhaps locals highly integrated into Dilmunite cultural praxis' (Laursen & al-Otaibi 2022).

The monumentalization of tumuli and certain grave-goods, in particular the presence of metal weapons, appears to indicate the existence of a 'ruling elite' in al-Faw, according to a regional process of social complexification observed in many parts of Arabia and the Levant (Gernez 2007; Hausleiter, D'Andrea & Zur 2018; Laursen 2017). The only ascertained prehistoric rock art depiction in al-Faw, that of a warrior holding two spears, could support this hypothesis (Fig. 6, bottom).

Discussion

Pending further excavations, the chronological information seems to indicate a relatively short construction period for both monumental protohistoric ensembles: the tapered avenues in the second half of the third millennium BC and the graveyard of tumuli and cairns around the late third–early second millennium BC. This suggests that the al-Faw landscape was shared over time by two populations with different funerary and ceremonial practices. In one location (sq. E13-a), the tight distribution of cairns around a group of three tapered structures clearly shows that the cairns were built later and that the new tomb builders respected the integrity of the tapered structures. One after the other, each group left its mark on this natural zone, through distinct ceremonial practices, which did not remove their predecessors' territorial markers. A similar, successive distribution of remains in the landscape has been observed, for example, in the eastern Jaʿalān in Oman, where the Hafit tombs were built on high ground, while the Umm an-Nar tombs from the second half of the third millennium BC were constructed on lower reliefs, on alluvial or coastal terraces and hillocks (Giraud 2010: 79, figs 2, 7).

These two monumental ensembles in al-Faw also probably reflect a different use of the landscape. In the context of western Arabia, tapered pendants and funerary avenues are generally attributed to mobile populations (Dalton et al. 2021). By contrast, in Bahrain the early Dilmun tombs are mostly associated with sedentary populations living nearby (Laursen 2017). In al-Faw, the large graveyard points to a rather strong building investment of almost one tomb per month over 250 years. Nevertheless, this argument alone is insufficient to confirm the presence of a permanent protohistoric occupation at al-Faw. On the one hand, it is likely that central Arabia was a land of mobile pastoralism, since no perennial settlement sites from the third and second millennia BC have been identified in the region to date (e.g. Schiettecatte et al. 2013; Chevalier et al. 2021). On the other, the dating of the tapered tomb in ʿAyn al-Dilaʾ to the early second millennium BC could be evidence of a continuum of local funerary practices in the region from previous 'tapered avenue' structures, at the time of Dilmun trade. On these grounds, we can perhaps envisage the coexistence of different groups of mobile populations in central Arabia around 2000 BC: those with strong north-eastern Arabian connections, integrated in a Dilmun trading and cultural sphere (Laursen 2017; Laursen & al-Otaibi 2022), and those with older, local roots.

Interestingly, the 2000 BC milestone is characterized by profound upheaval in the protohistoric societies and environment of the region (Petraglia et al. 2020). The two collective monumental ensembles, tapered avenues and graveyards, developed during a critical climatic period around the '4.2 BP event'. At that time, water supplies in al-Faw were plentiful, unlike the current situation, and a close spatial connection can be established between both monumental ensembles and water sources. The number of tombs increases nearer the springs — a trend also observed in al-Kharj (Chevalier et al. 2021) — and the 'avenues' converge in their direction. In both cases, the strong symbolism of the place probably indicates that these two successive groups of protohistoric populations held similar beliefs.

The antique landscape

As a major caravan city on the route to eastern Arabia, al-Faw benefited from a dynamic trade of incense, aromatics, and exotic products which brought prosperity and wealth to its inhabitants (al-Ansary 1982; 2010; 2019). These substantial revenues and long-distance contacts with several kingdoms and cities (e.g. Maʿīn, Gerrha) were highlighted by the discovery of archaeological artefacts of exceptional quality with South Arabian, Greco-Roman, Palmyrene, Egyptian, and Parthian influences. The site was administratively centralized, as evidenced by official stamps, weights, and a local coinage. The numerous temples, oratories, and altars (al-Ansary & Tayran 2005) were dedicated to a wide range of gods: local (Kahl, ʿAbaṭ), South Arabian (ʿAthtar, ʿAmm, Sayin, dhu-Samāwī, Wadd), North Arabian (dhu-Ghābat, Maran), from desert Arabia (al-Lāh, al-Lāt, and Yaghūth), and the pan-Arabian god Īl, point to the presence of a religious clergy. Excavations by the KSU team showed three major phases of development between the third century BC and the third century AD (Phase 1: third–second century BC; Phase 2: first century BC–first century AD; Phase 3: second–third century AD). The recalibration of the ^{14}C dates obtained by KSU (al-Ansary 2019, i/a: 282–318) could indicate a slightly broader range extending from the fourth century BC to the fifth century AD.

Remote sensing and field surveys have brought to light the impressive dimensions of the oasis, with concentric organization around the main central residential and administrative areas. The oasis can be subdivided into five partly overlapping sectors: an urban area, the necropolises, a cultivated area, caravanserais, and a sacred area (Fig. 7).

The urban area

The urban area rose above the palaeo-wadi by at least 7 or 8 m in its western part, while the rest mainly developed on an oval hill made of aeolian and anthropic deposits to the north (Fig. 8).

The 'ancient town'

The 'ancient town' (*c.*250 x 150 m) is an inhabited area surrounding a large central courtyard (Fig. 9). It is crossed by a median east–west axis, 100 m long and 7 m wide, connecting the main square to the west and the tomb area to the east, with several north–south streets running perpendicularly to it. The spatial organization of the city seems to show a very dense but relatively irregular network of sanctuaries and tripartite houses (or 'Tower House'; see al-Ansary 2010: 341). Although no form of urban planning appears at first sight, a logical layout based on the cardinal points can be discerned around the central zone. As a working hypothesis, the alignment of the facades in the northern part of the city is reminiscent of the South Arabian urban planning of large fortified urban centres where the juxtaposition of houses offers a means of defence against outsiders, for example, at al-Ukhdūd (ancient *Ngrn*, in today's city of Najrān) (Mouton & Schiettecatte 2014: 188, 205).

A 'ring' of tower houses

To the south, west, and north of the ancient town lies a discontinuous 'ring' of tower houses/isolated villas. The northernmost houses, attributed to a well-to-do population, seem to dominate the religious area and the 'Suq'. A possible craftworking area comprising highly fired pottery fragments collected on the surface, has been located on top of the elongated hill directly north of the 'Suq' (see Fig. 8).

The religious and administrative sector

The religious and administrative sector, to the north-east of the ancient town, is situated in a depression. The 'Suq' is located in the eastern part of this depression (in the 'Tall al-Kabir') (al-Ansary 2019, i/a: 67–72; 2019, i/c: 21–24). A rich archaeological assemblage was discovered in a set of buildings attached to and following the axes of the 'Suq' (al-Ansary 2010; 2019, i/c: 25–30), clearly showing the central role of this sector. The so-called 'Suq' is a monumental building with storage rooms organized around an elongated central courtyard with several phases of construction (al-Ansary 1982: 17–18; 34–38). Northedge (2008) recalled its military character, suggesting a late fort around the third century AD. A highly eroded and almost invisible enclosure possibly surrounded the 'Suq' area when it was in use (Herbert 1984). This area may also have comprised plantations,

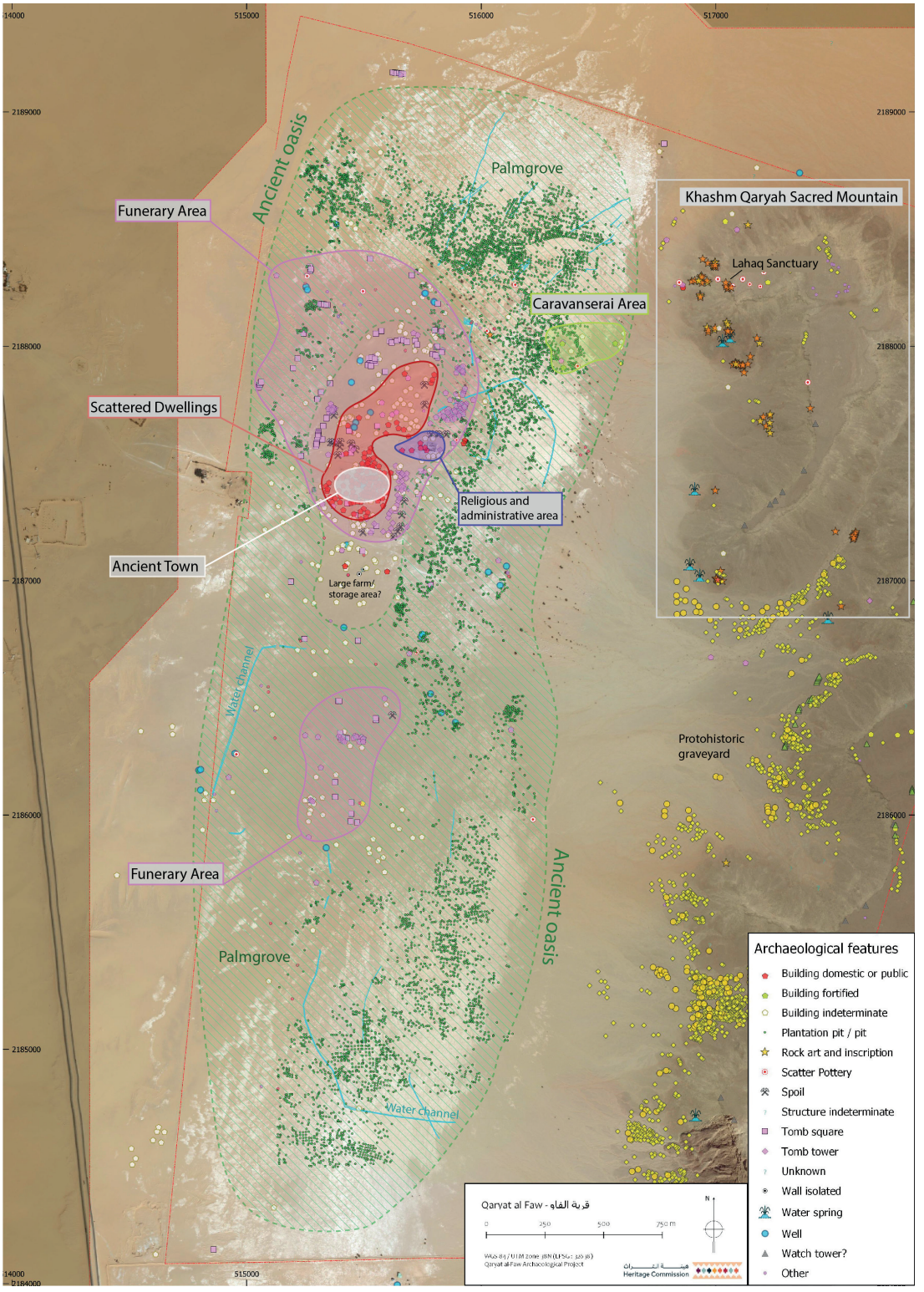

Figure 7. *The ancient landscape of al-Faw (©QFAP, CAD G. Charloux).*

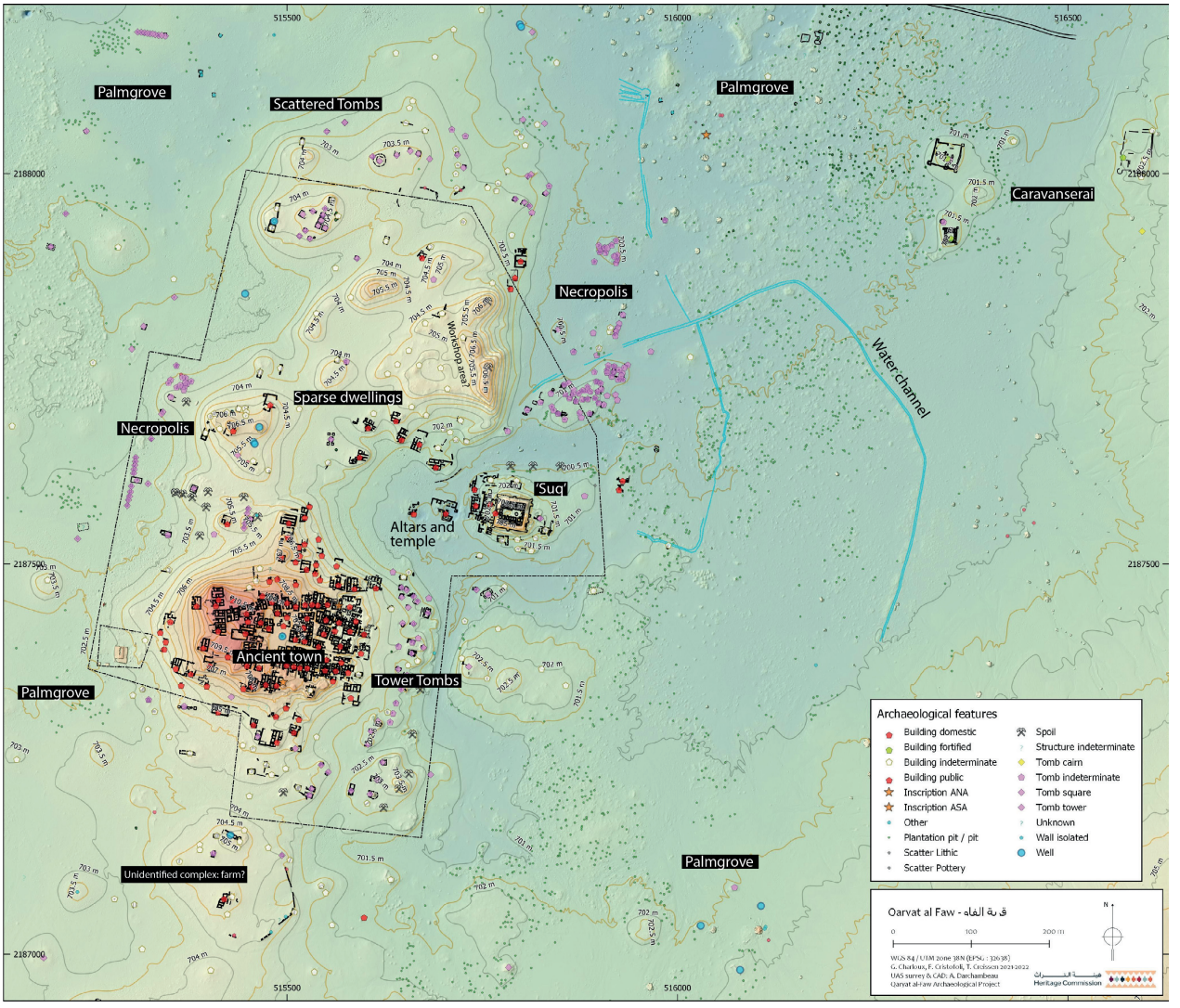

Figure 8. *The urban area in al-Faw (©QFAP, CAD G. Charloux).*

and possibly even water channels. It seems plausible to consider the hypothesis that it may have been a fortified building protecting the resources of a local religious component, rather than a purely commercial or military building.

The large central well in the 'Suq' was probably the focal point of the building, as evidenced by a water channel leading out of the western gate towards the cult area (al-Ansary 1982: 35, fig. 4). Indeed, the 'Suq' is located along the axis of a small altar area comprising a temple, with a 6 m-deep well to the south (al-Ansary 2019, i/a: 77–78; 2019, i/c: 34). This altar area was located to the west of another religious complex dedicated to Sayin, Shams, and ʿAthtar. The latter consisted of two large columned halls (*triclinia*) and is thought to date to the second century BC (al-Ansary 2019, i/a: 78–80; 2019, i/c: 32–33; 1982: 17–19, 40–41).

Further west of this 'religious' complex, in the heart of the oasis, the main axes of the oasis led to a vast empty open square surrounded by tripartite houses. This open area may possibly have been used for meetings by the inhabitants or for gatherings of caravans.

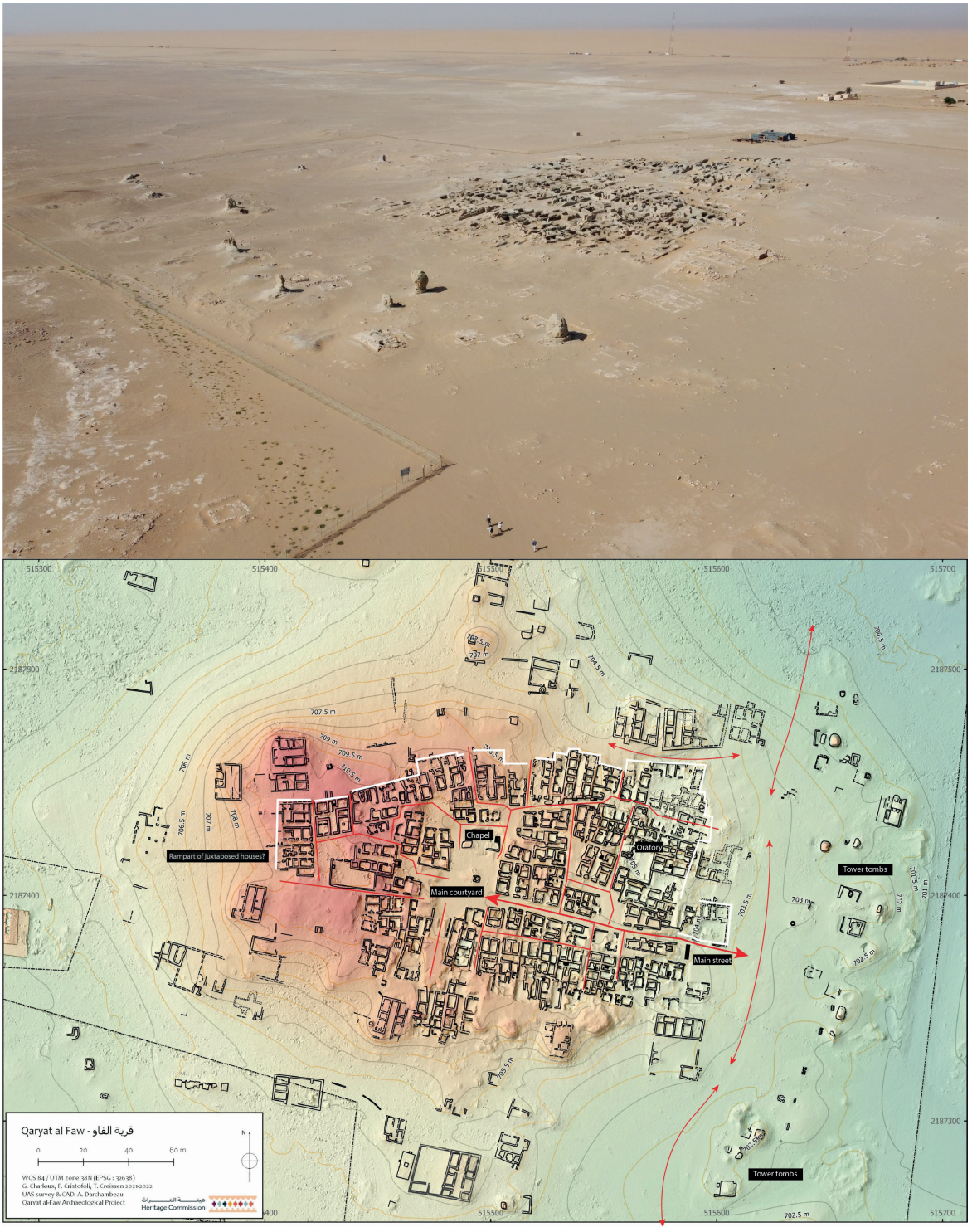

Figure 9. Top: *the ancient city of Al-Faw, with the necropolis of tower tombs in the foreground;* **bottom:** *a proposal for a rampart of juxtaposed houses in the ancient city of al-Faw (plan made by remote sensing and compared with plans in al-Ansary 2019) (©QFAP, T. Creissen [top]; ©QFAP, G. Charloux & A. Darchambeau [bottom]).*

The necropolises

A second ring, this time funerary, surrounds the urban and religious sectors. It is bordered by the cultivated areas, although the presence of plantation pits and domestic or public buildings intermingles with the funerary structures, showing a permeability of the sectors, as well as possible modifications of the function of the different areas over time. Within this second ring, a distinction can be made between two funerary sectors:

1. The necropolis of tower tombs is still preserved in elevation. These spectacular tombs with collective inhumations have aroused much public and scientific interest (e.g. Mouton 1997; 2006). They are located to the east and south-east of the urban area, along the main path leading from the religious area to the ancient town.
2. A larger second set of necropolises encompasses the remaining spaces and extends over 1 km to the north-west and 1.5 km to the south (with empty spaces). The graves are relatively densely built around the urban areas, and more loosely farther out. The tombs are mostly square-shaped and relatively modest in size, and are often arranged in squares or rows. Other tombs present original shapes. Some of them include high-quality moulding decorations, such as the magnificent tomb of Muʿāwiyat son of Rabīʿat king of Qaḥṭān (*c*. first–early second century AD; al-Ansary 1982; 2019). These tombs are either scattered around this vast oasis or concentrated in clusters (necropolises). Four main clusters appear on the current map:
   a. a necropolis to the north of the Suq, composed of *c*. thirty square tombs now without elevation and very badly eroded;
   b. a necropolis in the west of the site along the axis of the religious area and the 'Suq' comprising the famous tomb of Muʿāwiyat;
   c. a necropolis located 300 m north of the previous one, composed of a few adjacent square tombs;
   d. a concentration of a few square tombs, oriented along the cardinal axes, several kilometres to the south, now fenced.

The cultivation zone

The city relied on a vast irrigation network with surface water channels for its subsistence (al-Ansary 1982: 15–16). Date palm, colocynth, pomegranate, jujube, sesame, olive, grapevine, wheat, purslane, millet (and other desert plants) are some of the species identified during excavations, revealing high plant diversity in the oasis during antiquity (study by H.M. Husayn in al-Ansary 2019, i/b: 319–342), while large amounts of fauna testify to meat consumption (camel, cattle, goat, sheep) and horse riding.

The cultivated area surrounding the site and its funerary areas on all sides resembles a palm grove, possibly with orchards and gardens. We estimate that the palm grove was 5 km in length (north–south) and 1.3 km in width (east–west), based on the location on aerial imagery of more than 7530 plantation pits (excluding those in sand). In addition, eleven water channels and thirty-three wells were identified (compared to 120 wells identified by al-Ansary [2010]), which would have transported water over distances of hundreds of metres, possibly from springs or mother wells (?) (Fig. 10, bottom). A piriform-shaped plantation pit with a circular opening dug into the calcified sand *levée* and the underlying calcareous substratum reached a total depth of *c*.1.40 m. The pit is mainly filled in with well-sorted loose sands, containing desiccated root remains (Fig. 10, top).

The caravanserai sector

An isolated coherent sector, *c*.300 x 130 m, at the eastern edge of this palm grove, includes two caravanserais (or forts), and possibly two additional large structures that are difficult to interpret (Fig. 11). The most significant building (QF03587) is a rectangular construction measuring 18.5 m (N–S) x 15.5 m (E–W). The walls are 0.8 to 1.2 m thick and made of medium-sized grey, poorly squared limestone blocks. The four sides of the rectangle are formed by thick casemate walls. The north–south corridor was probably protected by a three-chambered gate set into the wall. The building comprises four corner towers.

Archaeological evidence attests that the ancient city was deliberately open to traders on the caravan

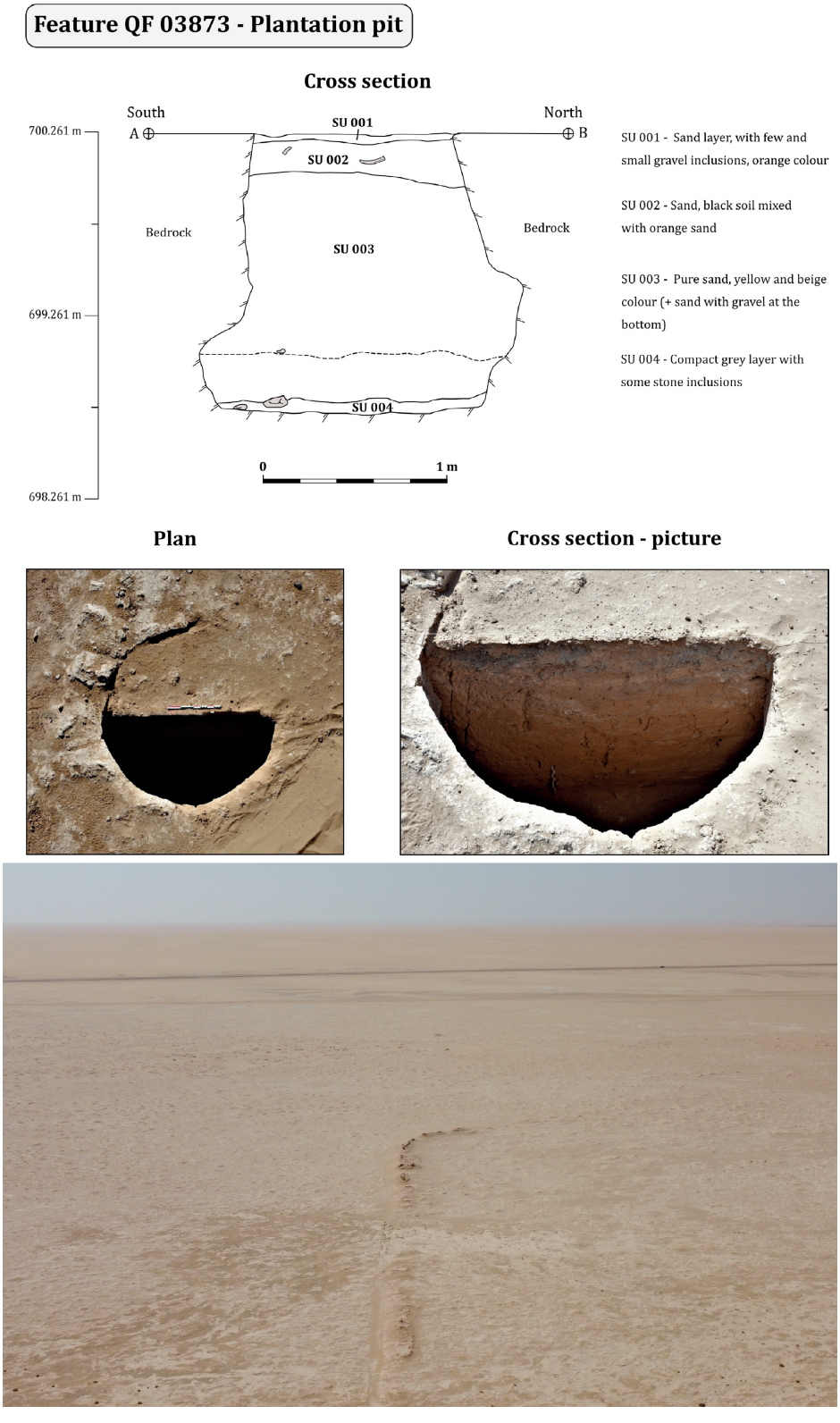

Figure 10. Top: *excavation of a 'plantation pit';* **bottom**: *a water channel south of al-Faw (©QFAP, T. Creissen).*

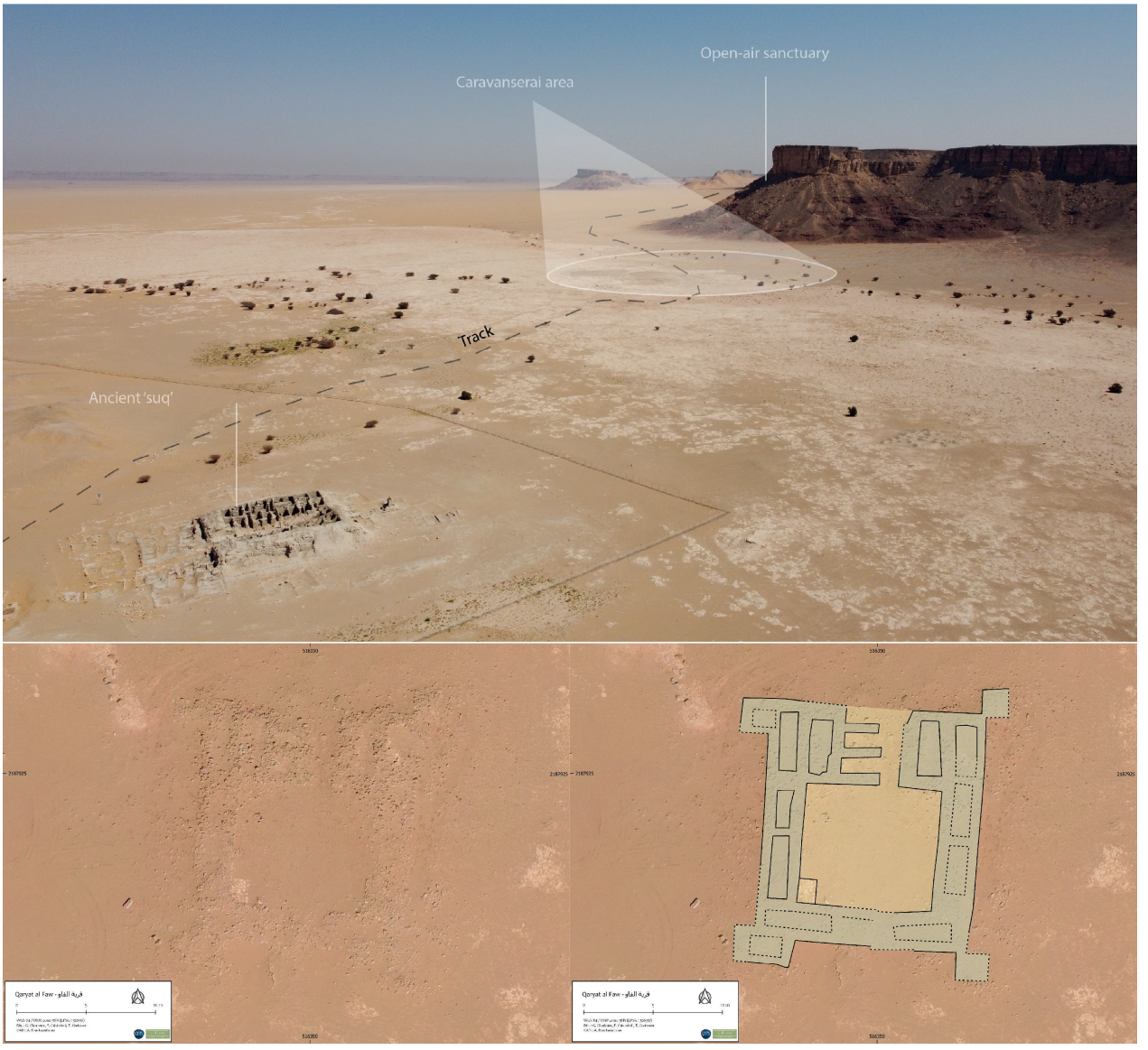

Figure 11. *The fort/caravanserai sector facing north-east, and building QF03587 (©QFAP, T. Creissen, CAD G. Charloux).*

routes between Najran and central Arabia. Caravans were probably controlled by the local authorities at the entrance to the oasis, possibly by this series of caravanserais. Similar layouts with a remote set of caravanserais on the fringes of a major settlement are known at other Arabian sites (e.g. ʿAynunah; Gawlikowski, Juchniewicz & al-Zahrani 2021). Considering some architectural similarity with the 'Suq' as well as forts CW and H at Mleiha (Benoist, Mouton & Schiettecatte 2003; Mouton et al. 2012) and the fort at Qalaʿat al-Bahrain (Kervran 2013), it would be tempting to date the fort/caravanserai area to the late pre-Islamic period, around the third–fifth century AD — with all the necessary caveats.

It is likely that a main track along the Jabal Tuwayq led from north-east and central Arabia to the Khāshm Qaryah, then to the area of the caravanserais, and finally, following the main water channel north of the 'Suq', to a large, empty open space in the centre of the oasis.

The Khāshm Qaryah sacred mountain

The rocky outcrop at the northern end of Khashm Qaryah, on the western edge of Jabal Tuwayq, is a remarkable landmark. Archaeological and epigraphic evidence seems to confirm that this was a sacred site.

The open-air 'Lahaq' sanctuary

Above the sandstone slope, and below the steep limestone cliff, a natural terrace was probably used as an open-air sanctuary (Fig. 12). Only a few walls built of large, roughly-hewn stone blocks are still visible, perpendicular to the cliff. However, five inscriptions and several artefacts collected on the ground are all indicative of a religious context. The most significant inscription is carefully engraved on a reused limestone block (*c.*51 x 20 x 18 cm). The upper side shows a drafted and pecked pattern with four Ancient South Arabian (ASA) letters (*ʾb ġl*). On the front side, three lines of a fragmentary ASA inscription mention the building of a stela enclosure (*mnṣbt*) dedicated to the god Kahl. The author identifies himself with the nisba *Ġryn*, lit. 'the one of *Ġr*', 'the Gharrite', which most probably corresponds to the gentilic of the inhabitants of the East Arabian city of Gerrha (Robin & Prioletta 2013: 157–158; Robin 2016: 239–240).

Inscription O.QF09013-1

Transcription

1. *Whblt Mn*[*... b*]=
2. *ny Mlḥt Ġryn b*(*n*)[*y mn*]=
3. *ṣbt Khl b-Lḥq f-s*[1][*mʿ l-hw*]

Translation

1. *Whblt Mn*[...]
2. descendant of *Mlḥt*, from *Ġr*, built the
3. [cult-]stele (or cult-stele sanctuary) of Kahl in [its mountain/sanctuary] Laḥaq. And may He listen to him.

A limestone altar (?)

An altar or small sanctuary was found at the base of the slope. It is a severely damaged building, *c.*8 x 8 m, built of hard, whitish high-quality limestone, with rare perpendicular walls outcropping on the ground, covered with rubble, fragments of carefully carved limestone blocks, and an offering table (Fig. 12). In front of this building, a semi-buried square structure, probably a cairn burial chamber, may possibly have been reused later as a ritual structure incorporated into the building (ablution, libation, or other).

Rock carvings

Seventy-nine rock panels were recorded on the foothills of the plateau, most of which had been previously identified by Jamme (1973). If we consider the distribution of rock inscriptions alone — recent Arabic graffiti excluded — the graffiti are engraved in the ASA alphabet, in the Thamudic Himaitic alphabet, and in a mixed alphabet comprising ASA and Himaitic letters.

These inscriptions include a great number of simple nouns, some of which are surprisingly recurrent (especially *Mḏkr*). A large *dhāl*, the symbol of the deity Dhu-Samāwī, is visible on a rock panel not far from the monogram of the god Kahl. Theophoric names, although often comprising the divine name of Īl, show a wide variety of deities bearing witness to a much more varied socio-cultural context than that of the formal texts in the ancient town. These graffiti were probably engraved by both the inhabitants of the city and nomads circulating in the region.

While epigraphy is widespread, figurative representations are surprisingly rare (n=30). These are mainly animal representations (camel, ibex, gazelle, horse, ostrich) and some human figures. Among them, a depiction of a horse-drawn chariot in profile — unless it is a cart pulled by a donkey — is the southernmost attestation of a wheeled vehicle in pre-Islamic Arabia (Macdonald 2009; 2012), and the only equid depiction in this area.

Except for a large human figure (QF09001), all the graffiti and petroglyphs seem to date from the eighth century BC, the period when these scripts appeared, to the third–fifth century AD, date of the abandonment of the city. The distribution map (Fig. 13, top) shows a close association of graffiti and petroglyphs in the Khashm Qaryah area alone, reinforcing the symbolic value of the massif. In addition to the presence of a small altar and a supposed stela enclosure, the graffiti includes a blessing

Figure 12. Top and middle: *a natural terrace down the cliff with cultic material and the inscription O.QF09013-1 dedicated to Kahl;* **bottom:** *the remains of a small religious building down the slope at Khashm Qaryah QF03934 (©QFAP, T. Creissen, J. Schiettecatte [top and middle]; ©QFAP, J. Schiettecatte [bottom]).*

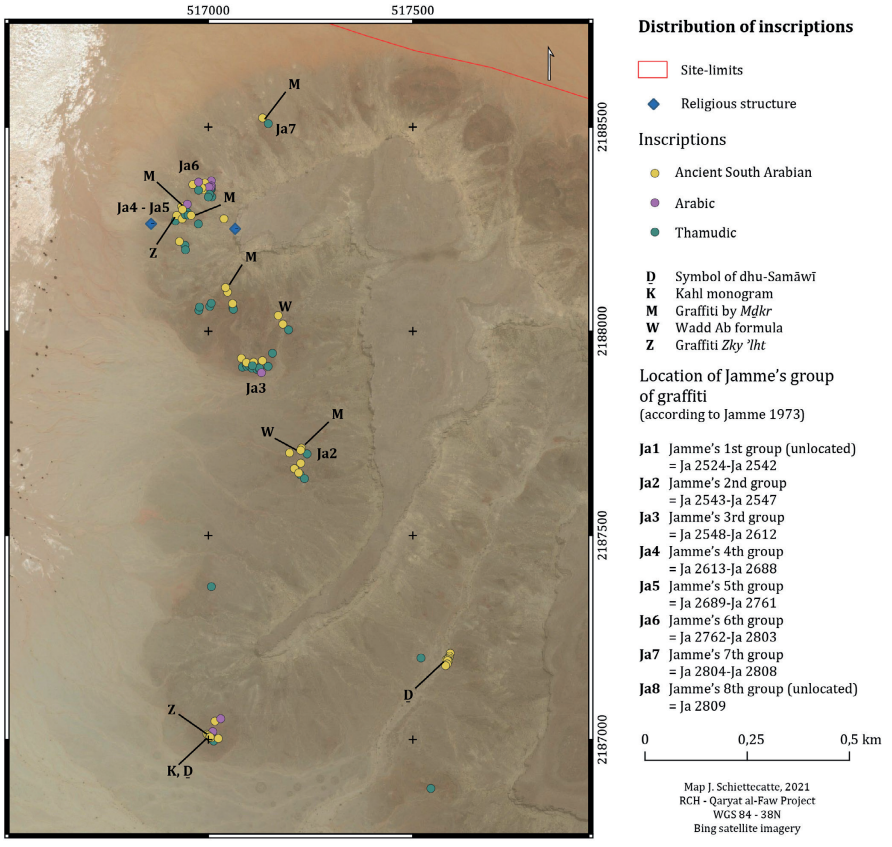

Figure 13. Top: *a distribution map of graffiti and petroglyphs in al-Faw near the religious structures mentioned in the text;* **bottom:** *the only rock art depiction of an equid-drawn chariot/cart in South Arabia (©QFAP, J. Schiettecatte).*

formula to the god Wadd and the symbol of dhu-Samāwī, as well as the name and monogram of Kahl. The role of the mountains in the South Arabian religion has been frequently demonstrated (Robin 1981; 2012: 38–39). For example, the main deity of Najran, dhū-Samāwī is referred to as 'Master of the Rock of Ragmatum'. In this respect, it would not be surprising if the Khashm Qaryah landform was the sacred domain of the main deity of the oasis, Kahl.

Synthesis

All these elements testify to the presence of a large ancient oasis and city, centred on a possibly fortified residential area, with a religious and administrative area some distance away, surrounded by necropolises and enclosed by a vast palm grove. A sacred mountain, Khashm Qarya, protected the city to the east, along the path leading to eastern Arabia controlled by forts/caravanserais. As a whole, the oasis of al-Faw appears to correspond well, in terms of religion, central administration and writing, architecture and general planning, to an ancient South Arabian city from the turn of the Christian era, with strong central, north, and eastern Arabian connections.

Conclusion

The preliminary results of the project provide the first comprehensive and functional mapping of the al-Faw area. In addition to scattered, older traces of the Palaeolithic and Neolithic, the survey shows two main spatially distinct phases of the al-Faw landscape.

The first phase, during the few centuries around 2000 BC, highlights the intense activity of successive mobile pastoral populations. They built highly symbolic avenues of tapered structures, as well as graveyards with thousands of tombs showing links with eastern Arabia, in a refuge area — a 'proto-oasis' — providing water and probably grazing areas.

The second phase during antiquity confirms the integration of the ancient city of al-Faw into the framework of a much larger oasis than previously thought. It shows how the settlement developed in a desert context and became a major stop along the caravan routes between eastern, northern, and southern Arabia. Inscriptions, imports, and cultural features reveal the close connection of al-Faw with these three distinct cultural spheres.

Site occupation thus appears to have been discontinuous, with long periods of no activity alternating with phases of intense development. For the protohistoric and antique periods, it is remarkable that the creation and evolution of structures were so strongly linked to the symbolic character of the landscape, and in particular to the impressive Jabal Tuwayq.

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